MAR 5 1931

Medical Library

March, 1931

Clinical Medicine and Surgery

Volume 38 Number 3

Leading Articles

Studies on Parathyroid Tetany
By John C. Brougher, M.A., M.D., Vancouver, Wash.

Treatment of Hernia by Injection
By F. Slater Jameson, M.D., Newark, N. J.

Anorectal Fistula
By William A. Hinckle, M.D., Peoria, Ill.

Coital Interlocking
By Marie Carmichael Stopes, D.Sc., Ph.D., F.L.S., London, Eng.

The Treatment of Gastric and Duodenal Ulcers
By J. E. Engstad, M.D., Grand Forks, N. D.

The Hard of Hearing Patient
By Harold Hays, M.D., F.A.C.S., New York City

The High-Frequency Machine
By Burton Baker Grover, M.D., Colorado Springs, Colo.

The Role of Roentgenology in Psychiatry
By M. J. Hubeny, M.D., Chicago

Vesical Calculus
By J. L. Pritchard, M.S., M.D., San Jose, Calif.

Editorials

James Young Simpson
Talking to Ourselves
Coffey-Humber "Cancer Cure"
Preventive Medicine

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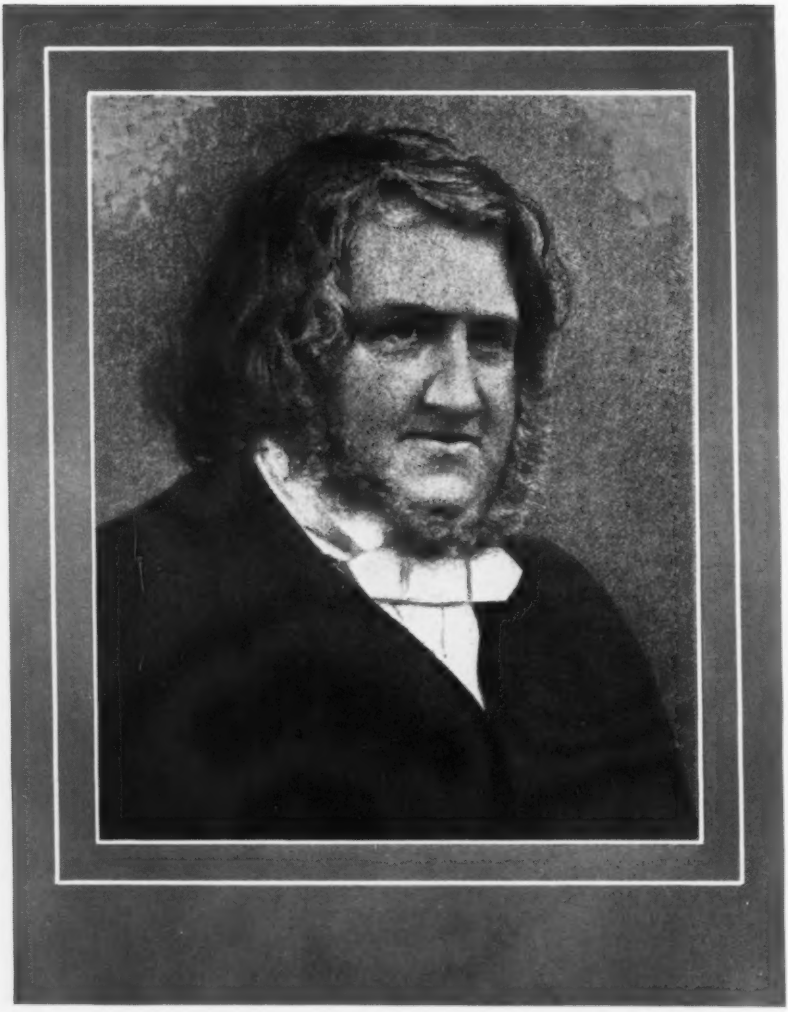

Courtesy, *Medical Life.*

SIR JAMES YOUNG SIMPSON, M.D., BART.

UNIV. OF MICH.

CLINICAL MEDICINE AND SURGERY

VOLUME 38 MARCH, 1931 NUMBER 3

James Young Simpson

Pioneer of Obstetrics and Anesthesia

AT THE close of the eighteenth century and the beginning of the nineteenth, there lived in Bathgate, Linlithgow, Scotland, a baker named Simpson, whose wife had blessed him with seven sturdy pledges of her love, the last of whom first saw the light on June 7, 1811, and was christened James Young.

Though poor, the family had ideals and aspirations, and it was decided that the baby should be given the benefit of a university training. Accordingly, when he was fourteen years old, James matriculated in the College of Liberal Arts of the University of Edinburgh and, after two years, entered upon his medical studies, receiving his degree at the age of twenty-one, on which occasion he presented a thesis on "Death from Inflammation," which so impressed the professor of pathology that he made young Dr. Simpson his assistant.

Primitive peoples exclude men from the lying-in chamber; and The United Kingdom and the United States were even more primitive in the middle of the nineteenth century than they are now. As late as 1848 a pamphlet was published in Boston, entitled "Man-Midwifery Exposed," in which appeared the statement, "The employment of men in midwifery practice is grossly indelicate and always constitutes a serious temptation to immorality."

In spite of popular and scholastic opposition, however, men became obstetricians, and James Hamilton, who was professor of midwifery at the University of Edinburgh for many years, fought throughout his academic life to have his department given recognition and respectability.

Simpson, who was one of Hamilton's students, decided that he would follow in that teacher's footsteps and, when the old fighter passed on, the young fighter, then only twenty-eight years old, applied for the vacated chair, to which, after a campaign as stormy and acrimonious as some of our municipal political brain-storms, he was elected by a majority of one.

From that time on, the young accoucheur's popularity increased with astonishing swiftness. His consulting rooms were crowded; his lectures were eagerly attended; he was worshipped by women and loved by hard-boiled army officers; and his home swarmed with interesting people from all over the world. His winning smile, cordiality, sympathy and curiosity charmed everyone, and his massive "head of Jove and body of Bacchus" became a landmark in Edinburgh.

Before he was forty years old, Simpson was so famous that he was able to read biographic sketches of himself, which sent him into roars of laughter, because, for some reason, those who wrote about him seem to have been unanimous in picturing him as a pious plaster saint, in whose mouth butter would scarcely melt; whereas, one can not look at that keen, kindly, humorous, *experienced* face without realizing that its possessor must have lived widely and deeply. As a matter of fact, it is rather generally accepted that Lawson Tait was Simpson's natural son, and Tait himself not merely acknowledged the connection, but almost boasted of it.

As a surgeon, Simpson is not entitled to rank high. In fact, Victor Robinson says that he was fonder of his ink-well than of his instrument case, for he contributed freely and helpfully to the medical literature of his day, having devised such well-known medical words as ovariotomy, coccygodynia, etc. Among his better-known works are monographs on hermaphrodism, pelvic cellulitis and the employment of version in cases with deformed pelves. He also introduced the long obstetric forceps, the uterine sound, iron-wire sutures, the sponge tent and a number of other familiar gynecologic and obstetric instruments and procedures.

His greatest fame, in future generations, will, however, rest upon his introduction of chloroform anesthesia in obstetric practice. There is much discussion as to who first used this drug (discovered by Justus von Liebig, the great German chemist, in 1831) as an anesthetic, but it is certain that when, after a number of personal experiments with it, Simpson administered its beneficient fumes to a woman in the pangs of labor, on November 4, 1847, he was the first who ever applied its powers in just this way, and possibly the first to use it for the relief of pain of any kind.

In this connection it is interesting to note that the violent controversy over this procedure, which raged for some time, was based, not upon its possible dangers to the mother and child, but upon the supposition that it might cause erotic feelings in the mother and lead to "immorality"; and upon the fanatical religious superstition that it was contrary to God's will to mitigate the "curse of Eve" by artificial means. Simpson retorted to the latter contention by citing the scriptural record that, when Jehovah performed the first costectomy upon Adam, in order to furnish him with a wife, He "caused a deep sleep to fall upon Adam"—which is just what the chloroform accomplished.

The final vindication came when Queen Victoria, being with child and having heard of Simpson's pain-reliever, consented to have her sufferings assuaged by that means and thereby ended the fight, for "The Queen can do no wrong." When he was created a baronet, in 1866, Simpson adopted, as his coat of arms, the rod of Aesculapius over the motto *Victo dolere!*

Not content with his laurels in the field of medical literature, Simpson also made a name for himself by his writings on archeologic and historical subjects. He was awarded the Montyon prize of the French Academy of Sciences in 1856.

Here was a man, of whom Garrison declares that he was one of the four most prominent obstetricians of modern times (the other three being Semmelweis, Credé and Braxton Hicks), who, by reason of his extraordinary and fascinating personality, even more than because of his keen and active mind, was one of the most picturesque figures, not only of his time, but of all medical history, and received the full reward of his talents before his death, which occurred on May 6, 1870, as a result of angina pectoris and overwork.

His remains received a public burial and a statue has been erected to him; but one feels sure that these evidences of his fame would mean little to him, as compared with the pleasure he took in winning his fights

against his enemies and enjoying the admiration and love of his many and ardent friends.

The active, social individual, who does not bother his head much with heavy thinking, is better at understanding the behavior of his neighbors than is the quiet thinker.—Dr. H. S. Langfeld, in *Science Service*.

Talking to Ourselves

FEW things are more distressing, to a man of judgment and discretion, than to hear someone constantly talking about himself, in narrow personal ways. That does not mean the man who has had some remarkable experience or has acquired some particular skill and is trying to tell of the *experience* or instruct someone in the *skill*, and can scarcely do so without mentioning his part in it. It means the man who, sometimes under cover and sometimes right out in the street, talks about *his* possessions, *his* achievements, *his* petty individual experiences (which interest nobody but himself), until the gorges of the thoughtful rise within them.

There is just one person to whom a man may, with propriety, talk frankly and freely about himself, and that is the fellow who daily walks about under his hat. And that is just the man to whom few of us, if we are honest and outspoken, relish talking about ourselves. It is also the man to whom talk about ourselves may possibly do some good, if we are careful to avoid spreading applesauce.

If each of us would stand himself up in the corner each night before retiring and give the rascal a good cussing-out, we would walk abroad among our fellows with more humility and give more cause for joy to those who love us.

It might go something like this:

"Look here, old scout, what do you mean by bellyaching about 'never having had a chance' and about 'the luck being always ag'in you'? You know perfectly well that the reason you are a dub today is because you have always been too *lazy* to work hard enough to be anything else. You have a sound body and a reasonably good brain, but you have let them both loll about until you are getting an 'alderman's goitre' on top as well as in front. You know that 'luck' is a word that belongs to morons and precox personalities, and I don't want to hear any more such foolishness out of you. Hereafter you're going to get out and *dig* for the material and immaterial things you want; if you talk about me you're going to state the plain, unvarnished truth (that will keep you quiet for a while!); and, if you can't think of something pleasant to say about the other fellow, you're going to keep your mouth shut. Understand?"

That sort of harangue is a good basis for the daily soliloquy, but if it stops there it may breed an inferiority complex, which is poor business, any way one looks at it. After a man has cleared away the crust of whitewash which, to a certain extent, he must wear in modern society, and feels properly chastened, he should remind himself of his individual abilities and have a heart-to-heart talk with himself as to the best methods of using them *for the benefit of others*. Then he should take a look at his dreams—his ideals—and try to discern a path which will take him to those difficult but delightful summits.

If one yearns to hear pleasant things said about oneself, there is a sure way to accomplish it. One must make a regular, daily practice of saying pleasant things, and pleasant things *only* (in ordinarly social intercourse) *about other people*. Then the immutable and unescapable law of *cause and effect* will work, and presently one will be hearing complimentary things said about oneself, by other people. Once having tasted that intoxicating experience, a man's taste for laudation must be badly perverted if he is ever again content with the flattery of himself which falls (disgustingly) from his own lips.

Kind and helpful words are indispensable to a joyous and zestful life, and there are enough of these to go around if each man

will consistently speak them *about someone else*, and will say to himself the unpleasant things which, down in his heart, he knows to be true, but which "even his best friend won't tell him."

Consume your own smoke with an extra draught of hard work, so that those about you may not be annoyed with the dust and soot of your complaints.—Sir William Osler.

When the high heart we magnify,
And the sure vision celebrate,
And worship greatness passing by,
Ourselves are great.
—Drinkwater.

The Coffey-Humber "Cancer Cure"

DURING the past year, the adrenal cortex preparation, sponsored by Drs. W. B. Coffey and John D. Humber, of San Francisco, and widely exploited in the public prints, has attracted so much attention among physicians that it seems reasonable to believe that there will be rather general interest in a succinct statement of the way this preparation has been handled.

In order to place the facts before our readers we shall quote directly from public documents and from various other official or semi-official papers, photostatic copies of which are before us as we write. No comments will be made upon these quotations, except to italicize certain words not so printed in the original documents, each man who reads them being permitted to draw his own conclusions.

The first document is an official report, issued by the government printing office, Washington, D. C., dated March 13, 1930, and entitled, "Federal Aid Toward Discovery of a Cure for Cancer—Hearing Before a Subcommittee of the Committee on Commerce, United States Senate, Seventy-First Congress, Second Session, Pursuant to S. Res. 79."

From page one we quote:

"Thursday, *March 13, 1930*. United States Senate, Subcommittee of the Committee on Commerce, Washington, D. C.

"The Subcommittee met, pursuant to call, at 10 o'clock, A. M., in the committee room, Capitol, Senator William J. Harris presiding."

From page eight (middle of the page) we quote, from the statement of Dr. John D. Humber:

" . . . But, *we have never claimed a cure*, and we don't intend to claim a cure in the present status of it. We have no right to do so under our professional standards, irrespective of our personal belief; we have only given our results, and we want to continue in our experimental work with the hope of convincing our professional brethren."

From page ten we quote, from the statement of Dr. W. B. Coffey:

" . . . I want it distinctly understood that *we do not claim a treatment or cure for cancer*. We are doing purely experimental work, and we make no claim whatever. . . . It will take some time before the greatest scientists in the world would use the term 'treatment' or 'cure.' "

The second document is a photostatic copy of an application for a patent, numbered 435281, embodying twenty-seven specific claims.

From the first page (machine numbered 9884) we quote:

"PETITION: To the Commissioner of Patents: Your petitioners, Walter B. Coffey and John D. Humber, citizens of the United States, residing at San Francisco . . . and State of California, . . . pray that Letters Patent may be granted to them, as joint inventors, for improvements in therapeutic substance and method of preparing the same, as set forth in the annexed specification.

"Signed at City of Washington, District of Columbia, this *12th day of March, 1930*."

(Signatures attached)

From the second page (machine numbered 9885) we quote the first paragraph:

"Our invention relates to a therapeutic substance having the property of stabilizing tissue growth and which by virtue of this property *is capable of controlling and/or destroying carcinoma, sarcoma and other malignancies*, and to a method of preparing the same."

The third document is a photostatic copy of a letter, from which we quote pertinent paragraphs:

"THE SECRETARY OF THE INTERIOR
WASHINGTON
April 5, 1930

"Honorable Thomas E. Robertson,
Commissioner of Patents.
"My Dear Mr. Commissioner:

" . . . I wish to express my extreme interest in the application for a patent filed by Doctors W. R. Coffey and John D. Humber on March 12, 1930, on their treatment for cancer. Their treatment is also of widespread public interest.

"I should be glad if you could make their application special under Rule 63 of the Rules of Practice of the United States Patent Office, so that consideration of their application may be expedited and that they may receive the benefit of the protection afforded by a patent at the earliest possible moment that they are successful in prosecuting their claim before your office."

(Signed) "RAY LYMAN WILBUR."

The fourth document, dated *April 29, 1930,* is a photostatic copy of the report of the examiner who was assigned to report upon the patentability of the product and process. This comprises eleven pages and includes a bibliography of twenty-six specific references to scientific literature. We quote from pages 3, 4, 5, 7, 9 and 11 of the report:

"The claims are all rejected for lack of utility as there appears to be no convincing basis for the allegations set forth in the specification that applicants' preparation stabilizes tissue growth, controls and destroys carcinoma, sarcoma and other malignancies. In the absence of a clear and convincing showing of the utility alleged, the claims are rejected.

"Claims 1 and 2 are rejected for lack of novelty. . . . Claim 3 is rejected as being fully anticipated by each of the following: Hartman et al. (2), Mira & Fontes (9), Rosenthal (10), Vasarhelyi (12). Claims 4 to 11 are rejected for lack of patentable novelty over Takamine, 730,198, who shows a process for making an extract of suprarenal glands substantially anticipating applicants' process. . . . Claims 12 to 16 and 25, being merely substantial repetitions of claims 4 to 11 in slightly different form, are rejected for the same reasons and over the same references as in the rejection of claims 4 to 11 above set forth. . . . Claim 17 is rejected as being broader than applicants' invention. . . . Claims 18 to 27 are rejected over each of the following references (a long list is given.—Ed.). . . . In other words, the claims define nothing classifiable within the classes of patentable inventions."

(Signed) "*F. M. Hopkins,* Examiner."

This might have daunted less sanguine souls, but within a month (*June 30, 1930*—Patent Office receiving stamp *July 1, 1930,* on page machine numbered 9901) a new set of claims was submitted, with a number of affidavits and hospital history sheets attached.

Their faith was justified. The studious examiner, *Hopkins,* was not troubled further, but the much more expeditious examiner, *P. M. Nash,* was able to settle the complicated questions involved in *twenty-four hours,* as is evidenced by the fact that the claim was passed for issue *July 2, 1930,* and signed by Nash (photostatic copy of abstract of patent papers).

Patent No. 1,771,976 was issued July 29, 1930 (four months and seventeen days after the application was filed!) and, on page 3 of that document, first column, lines 6 to 10 read: "*The extract has been found to be capable of destroying carcinoma, sarcoma and other malignancies without destruction of or injury to the normal body cells or tissues.*"

Take nothing for granted that may seem inconsistent with reason or established facts, simply because someone of acknowledged authority may have said it. —J. PROCTOR KNOTT.

PREVENTIVE MEDICINE

MOST people still have the feeling that the physician is a man to consult for the purpose of obtaining a cure when they fall ill—someone who can save them from the effects of the disease which they have *earned* by their ignorance, carelessness or obstinacy; but an increasing number of persons are realizing that a good doctor can do something much better than that—*keep them well!*

Every day, less and less people are fully satisfied with curative medicine alone; and

this will be increasingly true in the future. Periodic health inventories are becoming increasingly popular and prophylactic vaccinations of various sorts will soon be *demanded* by all intelligent and well-informed persons, for their children and for themselves, in spite of the clamorous protests of the antivaccinationists, who emote instead of thinking.

Medical men must assume the leadership, which should logically be theirs, not only in matters of the prevention of disease in individuals, but also in the wider and pressingly important field of community and social prophylaxis. We must teach the man on the street how foolish it is to think only of venereal infections when one speaks of "social diseases." Our modern complex, hurried and highly mechanized life has given rise to countless cases of psychic maladjustment and to many physical disorders which are, definitely, diseases of social origin.

We must teach people how to adjust their habits of life so that they can live rationally, even in the mad scramble which characterizes our cities; how to eat sanely, even in restaurants; how to budget their expenditures and deposits of energy, as they now husband their financial resources; and how to so order their family life that it may be a source of joy and strength, rather than of anxiety and harassment.

But before we try to teach these things we must learn them ourselves. The days when a physician was sufficiently equipped for his job if he had a sound knowledge of materia medica and the principles of surgery are rapidly passing, if they are not already behind us. From this day forth, the truly successful physician must be a man of broad culture and have a fund of knowledge which will give him tolerance, sympathy, understanding of modern problems and a philosophy which can be applied to their solution.

Let him who doubts the feasibility of the practice of preventive medicine, from an economic standpoint, give thought to the pediatricians, half of whose time is now spent in keeping well babies well. No wolves will be found howling at their doors.

In the Harvard Medical School they are now teaching the preventive side of *all branches* of medicine and the allied sciences. Such teaching is bound to be undertaken in other institutions. The physician who can read the signs of the times will avail himself of any instruction along these lines which may be available, and may be sure that, if he fills the assignment that society is about to give him, he will succeed, professionally and materially.

That wise medical counsellor of the lay public, Dr. W. A. Evans, was, we believe, a reliable prophet when he said: "The type of medical practice which will be remunerative in the future will be based upon a wider knowledge and understanding of medical fundamentals by the people."

Only by *anticipating* the demands of the public for more knowledge and more help in the business of living a fruitful and healthy life, can we prove our fundamental right to the confidence which it is eager to repose in us, if we show ourselves worthy.

LEADING ARTICLES

Studies on Parathyroid Tetany

By JOHN C. BROUGHER, M.A., M.D., *Vancouver, Washington*

THE parathyroid glands are four or more bodies so intimately associated with the thyroid gland that, when the latter is removed, the parathyroids generally go with it. These glands are oval-shaped and measure about six millimeters in length, three millimeters in width, and two millimeters in thickness, weighing, in all, about fifty centigrams. Cowdry[1] describes the location of the superior parathyroids as occurring on the medial aspect of the dorsal surface of each lateral lobe of the thyroid gland, at about the junction of its upper and middle thirds.

The earliest recorded experiments bearing on the parathyroid glands are those of Raynard[2] who, in 1835, removed the thyroid glands from a number of dogs and found that death frequently resulted in the course of a few days. Schiff,[3] in 1859, removed the thyroids from various animals and concluded from his results that the removal of the thyroid gland, in the case of rats and rabbits, was followed by no untoward symptoms; but in dogs and cats, removal was almost invariably followed by death within a few days. Sandstrom,[4] in 1880, is credited as being the first to describe the parathyroid glands. In 1891, Gley,[5] in removing the thyroid gland in a goiter operation, described a post-operative condition of tetany. This resulted in the rediscovery of the superior pair of parathyroid glands, knowledge of which had been lost for eleven years.

Gley, following his discovery of the internal pair of parathyroid glands, demonstrated that the acute symptoms of muscular twitching, dyspnea and death were due to the removal of the parathyroids, and not to the loss of the thyroid alone. He at this time, however, held that the parathyroids represented embryonic thyroid tissue. Kohn,[6] four years later, discovered the inferior or external pair. He recognized that every animal had four parathyroid glands and believed them to be different in structure and function from the thyroid, to which they were so closely related.

That our knowledge is not complete concerning the physiology of the parathyroid glands is evidenced by the fact that there are several different theories concerning the etiology of parathyroid tetany, the principal ones being the toxin, guanidine, acid-base and calcium theories. All the theories have many exponents and much experimental work may be found to support each. However, the work done by Collip and others, in isolating a potent parathyroid extract that will raise serum-calcium and control parathyroid tetany, gives strong impetus to the calcium deficiency theory.

When the parathyroids are removed, tetany develops. This is defined by Barker[7] as "a clinical syndrome, characterized by peculiar tonic spasms, involving certain groups of muscles or even the whole body musculature." A key to the diagnosis in all tetany, experimental and clinical, depends on the demonstration of an *increased response to galvanization of the motor nerves.*

SYMPTOMS IN EXPERIMENTAL TETANY

In untreated parathyroidectomized dogs, a syndrome develops which causes death in five to ten days. In dogs treated by any one of the several methods mentioned below, life may be sustained for indefinite periods of time. The first symptoms—anorexia, restlessness, anxiety, itching of the nose and decreased nerve resistance

to the galvanic current—appear, on an average, within from twelve to seventy-two hours. These are usually followed by mild degrees of depression, associated with inflammation of the conjunctival and nictitating membranes. An increased respiratory rate may be an early or relatively late symptom.

Following the preliminary symptoms, there appear, at intervals varying from one to five hours, *clonic muscular twitchings*, which are usually seen in isolated muscles of the back or head. The animal, at this time, is usually stiff-gaited and walks awkwardly. These early spasms are also very often seen in the posterior extremities and occasionally in the anterior extremities. Unless treatment is given, they soon become tetanic in character. The dog begins to breathe rapidly and becomes stiff and prostrated. Frequently, before entering this stage of prostration, there is marked snapping of the jaws and, as the tongue usually protrudes, it may be badly bitten. Saliva flows copiously from the mouth, in many cases, and the rectal temperature is raised to as high as 104° to 105°F. He may die in this first attack, from laryngeal spasm, but usually recovers, with no signs of tetany manifested for two to three days, after which an attack of severer character develops. In this attack, in addition to the violent convulsions, the temperature may rise as high as 108° to 109°F., the respiration increases and mild or severe frothing at the mouth may occur, accompanied by involuntary urination and defecation. He may throw himself into the air repeatedly and then fall prostrate. His legs are stretched out rigidly and his head and neck are in opisthotonus. Respiration may stop for a few moments and then gradually return. The legs relax after a time, the whole body becomes flaccid and the animal, though having appeared to be dead, may get up and walk. In a few minutes to an hour, he may have one or two more attacks, of increasing severity and frequency, and subsequently a fall in temperature, followed by death due to laryngeal spasm or exhaustion. A very interesting feature in regard to these tetanic attacks is that the dog may appear well one hour and, in the next hour, he may be in violent convulsions.

Symptoms in Man

Although the characteristic picture of tetany in man is similar to that just described in dogs, a brief discussion of clinical variations is of interest.

Postoperative tetany in man occurred with great frequency during the early days of thyroid surgery, when total thyroidectomy was practiced, but since the posterior and lateral capsules are left intact, it is found in only 0.15 percent of the cases, folowing subtotal thyroidectomy. It may also follow a diseased condition of the parathyroid glands, but a lesion of this type, extensive enough to produce clinical symptoms, is rare.

Following operation, tetany may develop in a few hours, due to removal of part or all of the glands. It may develop a few days later, due to disturbed blood supply from thrombosis; or still later, due to sclerosis of the glands from trauma, contraction of scar tissue; or the end result of chronic parathyroiditis. Tetany due to the latter causes is often nŏt recognizable until an infection, a menstrual period, a surgical operation or some other disturbance sets in, which is sufficient to break the compensatory mechanism. The patient then develops typical seizures. If only one or two of the glands were removed, no symptoms may occur, except under physiologic strain on the blood calcium, such as is found in pregnancy.

The first evidence of oncoming tetany is often *headache*, followed by restlessness and irritability; later twitching and tingling about the eyes and mouth appear. Soon tonic spasms occur in the upper extremities, producing the well known "obstetric hand," with a slightly flexed wrist. The forearm itself generally occupies a position intermediate between pronation and supination, while the elbow and shoulder muscles are usually little affected. The legs are often spastic and the feet are in a talipes equinovarus position. The greatest rigidity seems to be in the small muscles of the hands and feet.

Although the thoracic and abdominal muscles are less commonly involved, they do become spastic in certain severe cases and danger of asphyxia may arise, if the diaphragm undergoes spasms along with those of the respiratory muscles of the trunk and abdomen. In extreme cases, the whole trunk may be hyperextended (opisthotonos). Trismus may appear and, in "tetany face," the muscles become rigid and inmobile.

Aside from the tetany of skeletal muscle, gastrospasm or bronchial spasm may even

occur and, in rare cases, the heart, too, may be affected.

The duration of these attacks varies greatly at times. The tonic rigidity, which is very characteristic of tetany, may last only a few minutes, or it may continue from one to three hours. Clonic contractions, fibrillary twitchings and tremor may precede the tonic spasm. These spasms are followed by convulsions, which are often epileptiform in type and resemble "grand mal," except that consciousness is present. *Some authors regard epilepsy as a possible parathyroid disturbance.* Disturbance of proper muscle function may follow, making the patient exhibit a slow, shuffling, often waddling gait.

Diagnosis

The exciting cause of the actual attack may be emotional excitement, fatigue, worry, acute infections, menstruation or pregnancy. The diagnosis is not difficult, when one observes the characteristic tonic spasms, following a partial thyroidectomy. In milder cases, tetany is latent in nature and the Chvostek's sign, Trousseau's and Erb's phenomena, Pool's or Schlesinger's sign, and blood-calcium estimations are of value.

Chvostek's sign is elicited by tapping over the facial nerve, in front of the ear. If positive to the fullest degree, the muscles of the forehead, eyelids, cheeks, nose and lips suddenly contract. The response is designated as Grade I, II, III, depending on the condition of the motor nerve excitability.

In **Trousseau's** phenomenon, an "obstetric hand" is produced by the pressure of an Esmarck bandage or the compression cuff of a sphygmomanometer on the middle of the upper arm.

The arm and leg **phenomena of Pool,** later described by **Schlesinger,** is produced by forcible stretching of nerve trunks. Stretching of the brachial plexus, by forcible abduction of the arm, produces tetanic spasm of the hand; while stretching of the sciatic nerves, by means of forcible flexion of the trunk upon the thighs, produces tetanic spasm in the foot.

Erb's phenomenon depends on the increased electric excitability of the motor nerves. This is valuable in diagnosing adult, as well as infantile, tetany. The CCC (cathode closing contraction) is obtained with less current in patients with tetany than in normal ones; but the most characteristic reaction is that of COC (cathode opening contraction) appearing with less than 5.0 milliamperes of galvanic current.

Hoffman recognized an increased electric excitability of the peripheral sensory nerves.

It has been found, *in tetany, that the autonomic system is hypersensitive to epinephrin and pilocarpine.* Other evidence for the involvement of the autonomic system depends on cases in which the following symptoms have been observed: (1) Lacrimation, salivation and hyperhidrosis; (2) spasm of the intrinsic muscles of the eye; (3) disturbances of respiration; (4) disturbances of the heart; (5) vasomotor disturbances, such as facial pallor and numbness of the fingers; (6) functional disturbances in the gastrointestinal tract, such as hyperchlorhydria, pylorospasm or diarrhea; (7) disturbances of heat regulation.

In chronic tetany, such trophic disturbances as softening of the finger and toe nails and falling out of the hair may be observed. Enamel defects and cataracts are not uncommon. Mental dullness and enfeeblement of memory are often present, but since this condition is sometimes found following partial thyroidectomy, it may be due to a thyroid insufficiency.

The parathyroids were discovered less than fifty years ago, but knowledge concerning their functions has increased so rapidly that as much is now known about them as about any gland of internal secretion. The treatment of parathyroid tetany, experimentally, varies as widely as the theories of etiology.

Treatment

As early as 1909, MacCallum and Voegtlin[8] showed that oral, intravenous or subcutaneous administration of soluble calcium salts restored the blood calcium level and temporarily cured the tetany.

Luckhardt and Goldberg[9] and Dragstedt and Peacock[10] have stated that fifty percent of parathyroidectomized dogs may be kept alive indefinitely on a low-protein diet, with large amounts of calcium lactate and lactose. The lactose seems to be of special value in increasing the absorption of calcium from the intestinal tract, by changing the proteolytic flora to an aciduric or fermentative intestinal flora.

Hydrochloric acid and acid-forming salts, such as ammonium chloride and

sodium chloride, all temporarily relieve tetany, probably by their ability to increase ionizable calcium.

The most effective and quickest means of relieving tetany and raising serum calcium is to administer parathyroid extract, either subcutaneously or intravenously. The hormone prepared by Collip in 1924 is a potent product and may raise serum calcium from the normal level of 9 to 11 mgm. to over 20 mgm. per 100 cc. of blood. If serum calcium rises above 15 mgm. per 100 cc. of blood, it becomes dangerous, therefore, when parathormone is being used, frequent determinations of serum-calcium should be made. The *symptoms of parathyroid overdosage* are depression, nausea, vomiting and death.

Desiccated parathyroid has not been found of value in altering the course of experimental tetany.

Calcium by mouth, in immense quantities, relieves tetany, but it becomes distasteful to the patient and may cause a severe gastrointestinal upset. More recently, I have found **cod-liver oil and irradiated ergosterol (viosterol)** effective in relieving parathyroid tetany, in a large percentage of experimental animals. After 30 to 40 days of cod-liver oil or viosterol administration, serum-calcium returned to normal and no further tetany developed in the majority of the animals.[10 11]

These findings have been applied clinically to five patients having parathyroid tetany, and a brief clinical history, with progress notes, on these five patients is presented below.[12 13]

Case Reports

Case 1: Mrs. E., aged 36, white, had a subtotal, double lobectomy, March 17, 1926. She became restless and uncomfortable and, in the afternoon, was seized with twitchings of the face and carpopedal spasm. Ten cubic centimeters of calcium chloride was given, intravenously, for relief. From that time on, she had symptoms of tetany and it was necessary to give calcium chloride in doses of from 30 to 60 grains (2 to 4 Gm.) daily and parathyroid extract-Collip weekly. Even with this treatment she was not free from symptoms.

I first saw the patient, Feb. 26, 1927. The serum-calcium was found to be 7.86 mgm. per 100 cc. of whole blood; she had a pronounced Chvostek reaction and a positive Trousseau sign and complained of insomnia, muscle spasm throughout her body and tingling of the hands and feet.

Therapy with calcium and parathyroid extract-Collip was stopped and cod-liver oil, 4 drams (15 cc.) twice a day, with bakers' yeast tablets, 5 grains (0.32 Gm.) three times a day, were prescribed. She improved on this treatment and felt better than at any time since the operation.

In May, 1928, **viosterol** was substituted for the cod-liver oil. The dosage was 4 drops three times a day, and on this amount she seemed to improve and get along better than on cod-liver oil.

In December, 1928, she was again examined carefully and a mildly positive Chvostek sign was present. She had increased somewhat in weight, but was not myxedematous. She was mentally active. The finger nails were not so brittle as they had been, and the numbness in her hands and feet was less, during her menstrual periods, on viosterol than on cod-liver oil. She noticed that constipation or excitement caused an exacerbation of her condition. Whenever this patient was without viosterol for even a day, she noticed the symptoms of tetany recurring.

Case 2: Mrs. W., aged 45, a widow, white, was admitted with a diagnosis of toxic, hyperplastic goiter.

May 11, 1926, partial lobectomy was done.

May 25, partial lobectomy was done.

May 28, the patient was very restless and had a positive Chvostek sign. She was given 20 grains (1.3 Gm.) of calcium lactate four times a day, and parathyroid extract-Collip occasionally, until April 15, 1927, when cod-liver oil and yeast treatment was instituted. At this time the patient had a fairly marked Chvostek sign and complained of insomnia and spasms in her hands and feet. The muscles of her forehead also twitched considerably at times, especially during her menstrual periods. She improved on cod-liver oil, and the serum-calcium was 10 mgm.

In May, 1928, viosterol was given in a dosage of 4 drops daily. This completely prevented any disturbing symptoms of tingling in the toes or hands, restlessness or spasm of any muscle.

In March, 1929, the patient went without viosterol for a few days, but she began to feel nervous again, and cramping was noticed in the hands, feet and muscles of the throat and larynx. At the time of this report, she is in good physical condition and is still taking viosterol.

Case 3: Mrs. X., aged 30, white, entered Multnomah County Hospital, Feb. 9, 1928, in a spastic state of tetany. She was seven and one-half months pregnant. Six weeks previous to this spastic tetany, she had observed that her hands were numb and would cramp after she had been working. Three days before entering the hospital she had headache, hyperesthesia about the cheeks, paresthesia about the lips and twitchings in the muscles about the eyes and mouth. Hot flashes passed over her body and she perspired profusely. Soon her arms and legs became numb and cramped painfully. These cramps were intermittent in nature until spastic tetany ensued. She was first given calcium chloride, intravenously, and later parathyroid tablets, 1/10 grain (6 mgm.) and calcium lactate, 15 grains (1 Gm.), three times a day.

February 12 the patient was given cod-liver oil, 4 drams (15 cc.) twice a day. No more tetany occurred and she was discharged February 14.

She was readmitted March 16, and delivered

a full-term, male child. From March 16 to 19 she received no cod-liver oil and again developed symptoms of tetany. At this time the blood coagulation time was ten minutes; two days after she again took cod-liver oil, the blood coagulation time was only six minutes.

July 1, 1928, the patient was given viosterol, 6 drops, twice a day, and on this amount was free from tetany during lactation. Since the period of lactation, she has still found it necessary to take viosterol daily in the same dosage; however, she is able to go without it for a few days at a time.

Case 4: Mrs. A., aged 31, white, had a subtotal, double lobectomy in March, 1918. A few hours after the operation she became very restless and noticed numbness in her face and extremities, associated with painful muscle cramps, which were quite generalized. For six days she could not sleep, except under the influence of morphine. During this time she also had difficult and rapid breathing and her temperature was high. Eating, swallowing and talking were much disturbed.

After the patient left the hospital, the attacks of tetany came on with varying frequency, from two weeks to two months apart, and during her menstrual periods the symptoms were very severe. No diagnosis of her condition was made for five years; her only relief was a hypodermic injection of morphine.

In 1923 the case was finally diagnosed as parathyroid tetany, and for two years she was given calcium and parathyroid tablets. They afforded her partial relief, but she could not say that she was free from symptoms.

When I first saw her, she was seven months pregnant and, because of some nervousness, was taking parathyroid tablets, 1/20 grain (3 mgm.) and calcium, 5 grains (0.325 Gm.). In spite of this medication she complained of numbness in her face, scalp, hands and feet, flexion of her forearms and equinovarus spasms. These attacks were painful and tetanic in nature, not convulsive.

In June, 1928, she was given cod-liver oil, 4 drams (15 cc.) twice a day, in place of the calcium and parathyroid tablets. On this therapy she became free from symptoms within a few days and had no evidences of parathyroid deficiency during either gestation or lactation. After four months of cod-liver oil therapy she was given, instead, 4 drops of viosterol twice daily and was free from all symptoms of tetany until March, 1929, when she had a severe attack of influenza, which brought on the symptoms again. The dosage of viosterol was increased to 20 drops twice a day, and the tetany was alleviated.

At the time of this report the patient is taking only 6 drops of viosterol and is clinically in good condition.

Case 5: Miss T., aged 28, white, developed symptoms of tetany following extensive resection of the intestinal tract. In June, 1923, she had a curettage. In July she was having fever and abdominal pain. Appendectomy was performed, the right tube and part of the ovary was removed, and a general peritonitis was drained. In December she had an obstruction, and 9 feet of intestine were resected. In the following June, four more feet were short-circuited by anastomosis. Since these operations, she had had a constant and painful diarrhea of watery material and masses of mucus.

Since the resection of her intestine she had had repeated attacks of tetany, with carpopedal spasm, painful spasms in other muscles and rigidity. She had also complained of burning and tingling of the face and extremities. It is possible that the rapid emptying of the shortened intestinal tract had something to do with a calcium deficiency.

In November, 1928, she was found to have a positive Pool's or Schlesinger's sign and a negative Chvostek sign. She was given 6 drops of viosterol twice daily, in addition to the 15 grains of calcium she had been taking, and it seemed to relieve her greatly, as she was less nervous and irritable and slept better.

The patient has been taking viosterol daily for a year now and feels that it benefits her a great deal in relieving the tingling and numbness in the extremities, as well as the painful cramps which develop in the muscles if she goes without it. The serum-calcium has increased from 6.7 to 12 mgm. on this therapy. The patient also states that she has severe spells of vomiting if she does not take the viosterol. It seems that the food does not enter her stomach, which may be due to cardiospasm.

Conclusions

A review of the parathyroid glands including their discovery, anatomy, physiology, symptoms of deficiency and methods of treatment is given.

Brief histories of five patients having parathyroid tetany are given, with types of treatment used.

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Treatment of Hernia by Injection

Ambulatory and Non-operative Relief Following the Method of Piña Mestre*

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THE surgical treatment of hernia is generally regarded by the profession as highly satisfactory. Yet it is significant that, of the estimated four to six million rupture sufferers in the United States, only a small percentage ever seek medical advice for this condition.

The first recourse of the average hernia sufferer is to the commercial appliance maker or to the corner drugstore truss-fitter. Or, if his bump of gullibility is well developed, his hard-earned money swells the coffers of the mechanical cure-all manufacturer. Only a small minority of rupture sufferers entrust themselves to a physician's care.

Finally, the pain of his affliction may drive him to the doctor's office, where the likelihood is that he will be advised of the necessity of an operation, the average cost of which, including absence from business, would be about $500. When we add to this burden the very real hazard of post-operative recurrence, it is not difficult to understand why so many prospective patients decline operation and return to talk it over with their old friend, the appliance-fitter.

Faced with this dilemma, the average person finds it hard to decide between the services of the physician or the charlatan. On the other hand, when he is assured that there is a way of treating his rupture competently, inexpensively and with great likelihood of cure, and that this can be accomplished without operation, his confidence is acquired at once. This confidence is more than doubled when he finds that the treatment is to be carried out by an ethical physician.

All of this can be promised to the patient through the agency of the non-surgical treatment of hernia by injections. Although the method has not yet been applied by the rank and file of the profession, it has been used in so many thousands of cases, by specialists of high repute, that its scientific status is fully established.

From the viewpoint of the patient, it is exceedingly unfortunate that the profession has given the injection treatment for hernia so little cognizance. The lack of general recognition is perhaps logical, for the profession, rightly conservative, responds slowly to innovation. That the injection method was, in the past, extensively exploited by quacks, has been a vital factor in the lukewarm interest of the profession as a whole. But so, too, have almost all other worthy remedial measures been exploited.

My present plea is for a review of the entire subject of injection, in the interest of increasing support by my conservative but open-minded and forward-looking colleagues.

Promulgated by empiric reasoning, in the early history of its use, the mechanics of the injection treatment have since been put to the test of laboratory experiment upon guinea pigs, dogs and monkeys, at the New York University and Bellevue Hospital. I refer to the histologic studies of Dr. Alexander Fraser[1] on the tissue changes caused by the injection fluid; also to Dr. Ralph Wolf's[2] series of experiments on rats.

Physiologic Basis

Physiologically, the rationale of the treatment involves the well-known fact of the exudation of seroplastic lymph, with resulting adhesions, wherever there is trauma of the integument, the subcutaneous tissue or the musculature. In the pelvic and the inguinal regions, traumatic exudation of this seroplastic lymph is especially active. Hence the extreme care of abdominal surgeons to operate with minimum of wounding, so as to avoid adhesions.

In the treatment of hernia, the operator seeks to increase, rather than to avoid, the production of seroplastic lymph. By injection of a sterile, astringent fluid irritant into the walls of the hernial canal, an aseptic inflammation is set up, which stimulates the free effusion of plastic lymph

*From the Mestre Clinic, Newark, N. J.

and the ensuing formation of firm connective tissue. Continued injections further build up the connective tissue barrier, until the pathway for the descent of the hernial sac is entirely obliterated.

History

The period during which the injection treatment of hernia has been utilized covers nearly a century of intermittent scientific activity. First used in 1835, by Velpeau, the method was subsequently employed and described by Pancoast, in 1844; by Schwalbe, in 1877, by Heaton, in 1877; by Janney, in 1880; by Warren, in 1881; and by Lannelongue, in 1901. Manley's[3] monograph on hernia, published in 1893, provides an interesting resumé of the modifications of the injection method which had found clinical usage.

The modern application of the method was perfected by Piña Mestre[4], of Barcelona, Spain, who specialized in its use for more than twenty years, and who, by 1927, had employed it with marked success in more than 10,000 cases. Working independently, in the United States, Mayer[5,6,7] reported the results of his thirty years of specialization in the injection treatment, during which, by 1930, he had used the method in approximately 2,100 hernia cases.

The intermittent nature of these investigations has arisen because of the difficulty in formulating a solution which, without pathologic irritation, sufficiently stimulates the formation of connective tissue so as to obliterate the hernial canal permanently. Velpeau used iodine injections. Subsequently, tincture of cantharides was tried; then Lugol's solution and alcohol. Heaton obtained a fair percentage of good results with *Quercus alba*. Lannelongue employed a 10-percent solution of zinc chloride. The difficulty with the earlier solutions was that they were decidedly irritating and painful and required a large number of injections, over a period of many months.

Mayer's perfected technic employs a formula of zinc sulphate, phenol crystals, glycerine, cinnamon water and pinus canadensis.* Piña Mestre has preferred a formula, elaborated after seven years of intensive study, composed only of vegetable stimulating and astringent principles. Its ingredients, the most active constituents of which are alcohol and tannic acid, are as follows:†

Catechu	(U. S. P.)	15%
Monesia	(U. S. P.)	14%
Krameria or rhatany	(U. S. P.)	14%
Rosa canina	(Mex. P.)	15%
Vaccinum myrtillus		17%
Alcohol (98%)		25%

In the United States, Piña Mestre's formula has been used by Hall[8], who, in 1929, reported a series of 33 cases of reducible hernia treated by the injection method, with complete eradication of the hernia in all but one. In January, 1930, I reported the use of Piña Mestre's method in a series of 64 cases of inguinal hernia, with only four recurrences[9].

Surgical Intervention Versus Injection

Though he frequently resorted to radical operation, Manley[3], in his monograph of 1893, wrote regarding reducible, non-strangulated hernia: "Radical means, when the open incision is resorted to, are not only attended with danger to life, but, as they always entail the division of supporting structures, there can be no question but, in many improperly selected cases, the means instituted undoubtedly leave the part in a state favorable to a relapsing escape, and one more difficult to manage than the original."

In considering the incidence of hernia recurrence after surgery, one must bear in mind that a patient with recurrence, for economic and psychologic reasons, frequently fails to report back to his physician, but resorts to some less stringent measure of relief, so that the event of his relapse is not clinically recorded.

The incidence of recurrence after surgery has been variously reported. Thus McNealy[10] reported 12-percent of recurrences, in a series of 517 inguinal hernias at the Cook County Hospital. Andrews[11], discussing the same subject, has said: "I have been unable to find more than ten series of actually and properly controlled statistics on results. The best results are 6.5 percent inside of a year, and from that up to 10 percent of recurrences inside of a year. These figures come from the very best hospitals in America—Johns Hopkins, Massachusetts General, Presbyterian of New York. In the direct form, they run

*See Clin. Med. & Surg. Vol. 36 (Oct. 1929), p. 712.

†The solution may be obtained in ampules.

as high as 16 percent inside of a year, and in others as high as 25 percent."

With the injection method, as long ago as the eighteen-eighties, there were 80 percent successful results. Mayer reports, from his large series of cases, only 2 percent of recurrences. He states, from his personal experience, that he has frequently observed patients who had been operated upon from one to three times, with recurrence; but who, after the injection treatment, remained relieved for periods of from one to twenty years. Piña Mestre has found recurrence after injections much less frequent than after hernioplasty.

The injection method is simple, harmless, effective and practically painless. Surgical operation entails much more mutilation of tissues than does the injection method. Nor does the injection method present any difficulty whatsoever in the unusual eventuality that a subsequent radical operation is deemed advisable. It is worthy of note that the injection method has been used successfully in conditions where surgeons have refused to operate, because of the hazards of inhalation anesthesia.

Can the Injection Method be Used in All Cases?

Certain cases of hernia can be handled by no other method than radical operation. Thus, *in irreducible hernia, hernioplasty is imperative; and strangulation demands immediate herniotomy.* The injection treatment is used mostly for inguinal hernias, but may be employed, with a slightly modified technic, for femoral and umbilical hernias as well, but *not for ventral hernias.* Patients with nephritis, tuberculosis or diabetes mellitus, provided the percentage of sugar in the urine is not too high, may take the injection treatment. Hemophilia is a contraindication.

Piña Mestre has used the injection method, with excellent results, in children and newborn infants. In a series of 200 children treated, he experienced only 1 percent of recurrences. In cases of simple hernia in infants, Mayer advises an initial trial, for six months to a year, of hygienic measures, such as massage, diet and counterirritation.

The Technic of Piña Mestre in Inguinal Hernia

In our series of 64 cases of inguinal hernia, reported in January, 1930,* Piña Mestre's method was used, with only 4 recurrences. Two (2) of these were due to carelessness on the part of the patients, who disregarded our instructions regarding the temporary use of the truss, but were entirely relieved by additional injections In the other 2 cases, one enfeebled and the other with a large sliding hernia, the hernial protrusion was definitely improved.

Since our previous report we have continued our use of Piña Mestre's technic for inguinal hernia, with slight modification. Instead of injecting every day, we now inject at intervals of three, four and five days, and use a smaller quantity of solution—1 to 5 cc.

In preparing the patient for injection, the same care should be exercised as for a surgical operation. Lying on a surgical table, the patient is placed in a moderate Trendelenburg position, so that the intestines will gravitate away from the hernial opening, and the site of puncture is cleansed with iodine and alcohol.

To locate the site of injection, introduce the forefinger as far as possible through the external abdominal ring, into the inguinal canal in the direction of the internal ring. The invaginating forefinger will make a guide for the needle.

Using a needle ¾ to 1½ inches long and of 24 or 25 gage, inject 2 cc. of 1-percent procaine solution through the external abdominal ring into the inguinal canal, at a point as close to the internal ring as possible.

Leaving the needle in place in the interval, a few minutes later inject, *with extreme slowness,* the dosage of Piña Mestre's solution. Leave the patient in a recumbent position for five or ten minutes, with his fingers pressed over the site of injection.

While the number of injections required depends on the findings in the individual case, as a rule twelve or more injections are sufficient for permanent relief. Should slight pain occur several hours after the first two or three injections, heat applied to the site will prove soothing. Should aseptic inflammation of the canal or swelling of the cord arise in severe degree, which seldom occurs, the injections may be spaced farther apart.

Temporary use of Truss Imperative

During the course of treatments, the truss should never be removed, day or night, except that, during the bath, the patient should substitute a rubber truss. It is necessary, also, that the patient wear a truss for a considerable time after the com

pletion of the treatment, until the newly formed tissue has had time to unite firmly. When the physician is satisfied, after weeks or months, that the adhesions are firmly united, the truss may be discarded. During this period the patient should refrain from heavy, straining labor. The truss should be so adjusted as to maintain its efficiency in all postures of the patient. Failure to utilize the truss thus carefully will retard progress and is the cause of most of the recurrences.

The injection method requires skill and experience. Unless the physician has a fundamental knowledge of surgery, he should not attempt its use. Many of the failures laid to it have been caused by the inexperience of the operator in correct operative procedure. However, the method is simple enough so that any physician versed in minor surgery may, with practice, acquire expertness in its use.

Conclusions

1.—Our experience shows that Piña Mestre's injection method of treatment, in cases of inguinal hernia, gives rise to a smaller proportion of recurrences than does surgical intervention.

2.—It saves the patient the expense and danger of operation; or, if he refuses operation, affords permanent relief from much discomfort and misery.

3.—The procedure is harmless and practically painless and does not incapacitate the patient for work during its administration.

4.—It may be employed for all types of hernias except irreducible hernia and where there is strangulation, in which cases immediate operation is necessary. Hemophilia is a contraindication.

5.—The wearing of a truss, in conjunction with the injection method, is *imperative* until the new tissues are firm and strong.

6.—The method requires a working knowledge of surgery, as well as skill and experience on the part of the operator.

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Anorectal Fistula

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AN ANORECTAL fistula is a pathologic channel or sinus, opening in the anorectal region. The simplest and most practical classification is to divide such fistulas into complete and incomplete.

A complete fistula has two openings: one in the anorectal canal; the other in the skin of the anal area.

An incomplete or "blind" fistula is one in which the connection between these two surfaces is not complete. If it opens only into the anorectal canal, it is called an incomplete internal fistula; if it opens only on the cutaneous area, it is called an incomplete external fistula.

Anorectal fistulas may also connect with the urethra or bladder, with a coccygeal cyst and, in the female, with the vagina.

The simplest and by far the most common type of fistula is a single channel, passing more or less directly from the internal to the external opening. A fistula seldom has more than one internal opening. It may have one or more external openings. Multiple external openings usually mean that a simple fistula has burrowed in various directions, due to inadequate drainage. Channels leading from these multiple external openings nearly always unite and connect, by one main channel, with the internal opening. In about 90 percent of fistulas, the internal opening will be

found in the posterior quadrant of the anal canal.

With the exception of those cases due to trauma, anorectal fistulas are practically always the result of an abscess which has failed to heal from the bottom. This undesirable result can usually be avoided if the causative abscess is properly treated. The usual reason for this failure to heal is continuous reinfection from the bowel or inadequate drainage from the external opening. After the fistula has persisted for some time, it becomes lined with pyogenic membrane and surrounded by scar tissue. Spontaneous closure then need not be expected.

The symptoms of anorectal fistula will depend largely on its location, size, ramification and drainage. Many produce few or no symptoms. Others exude sufficient discharge to irritate the skin and soil the clothing. Still others are accompanied by more or less pain, depending largely on the amount of drainage. When, from closure of the opening or increased infection and secretion, the drainage is insufficient, pain increases until the pressure is again relieved.

How to cure fistula with certainty and safety is a problem that has taxed the skill and ingenuity of some of the best minds of the profession. The high percentage of unsuccessful results following operative procedures, together with the liability to fecal incontinence, has caused many victims of this condition to endure the evils they have, rather than risk those they have not.

This lack of certainty or safety following the older methods of surgical procedure has led to the use and abuse of many nonsurgical methods. Among these may be mentioned the injection of the fistulous tract with such caustics, irritants and antiseptics as solutions of silver nitrate; liquified phenol; tincture of iodine; and pastes of bismuth subnitrate, zinc chloride or sulphate. While these various treatments are successful in some cases, the percentage of cures is too small, the pain too severe and the treatment too prolonged to commend them to proctologists and surgeons generally.

These same objections hold for the various ligature methods that have been advocated from time to time.

With greater experience and improved technic, surgical results in fistulas are now much more safe and certain. There is now little excuse for temporizing with nonsurgical procedures.

There are three surgical procedures that have been most used in the treatment of fistulas: excision with suture, excision without suture and incision

Surgical Treatment

In excision with suture, the fistulous tract, together with all the scar tissue, is excised and the normal tissue brought together and sutured. Owing to the frequency of infection, primary union occurs in too small a percent of cases to commend this procedure.

Excision without suture has the theoretical advantage of removing the pyogenic membrane and scar tissue. Practically this does not seem to be of advantage in the average case. The larger opening resulting and the removal of Nature's protecting wall seems to delay rather than promote healing.

Simple incision of the fistulous tract is the procedure most in favor with proctologists. After the tract is laid open, the edges are trimmed, leaving a V-shaped wound, which gradually widens as it approaches the skin. This tends to prevent union of the skin or mucosa until the bottom has united. The tract itself may be curetted lightly, to remove the pyogenic membrane. This seems to be of advantage. Pure phenol carefully applied, also produces the same results. The phenol may be neutralized with alcohol, though this is not necessary.

Whether using excision or incision, a definite diagnosis is essential before operation is begun. With probe and colored fluid, the internal opening should be located, if present. An aqueous solution of methylene blue has been most used. My own preference is for a 2-percent solution of this dye in two parts of glycerin and one part of hydrogen peroxide. This menstruum is thicker and more viscid than water, consequently it is less inclined to run or spurt back and soil the operator and the linens. Being thinner than an ointment, it is easier handled and follows the channel better than heavier substances. The hydrogen peroxide causes enough effervescence to carry the dye into all the minute ramifications and will often disclose an internal opening not otherwise discernible. To me, the staining of the tract

seems a distinct advantage, though objected to by some.

In looking for the internal opening of a complete fistula, Goodsall's rule will be found of much assistance and reliable in about 95 percent of cases. Draw a line transversly, bisecting the anus. If the external opening of the fistula is anterior to this line, the tract will lead direct to the internal opening. If the external opening is posterior to this line, the tract will lead by a circuitous route, and open in the posterior median line, usually between the sphincters.

In making the diagnosis, one of the important things to determine definitely is whether or not the fistulous tract is superficial to the external sphincter. Proctologists differ widely as to the percentage of fistulas that involve the sphincter. My own observation is that the number of cases thus involved is less than is usually supposed. If the fistula is external to the external sphincter, the surgical treatment is much simplified. Incision of the tract does not require cutting that muscle, so there is no danger of incontinence in such cases. All such tracts may be opened fully at one sitting.

If the external sphincter is involved, the surgeon must decide whether the work should be done in one or more steps. If the fistula is a short, straight channel, connecting an external opening which is close to the sphincter with an internal opening between the two muscles, and if, in opening the channel, the muscle can be cut straight across (at right angles), such a fistula can safely be operated upon in one step. The incision required will not be so extensive but that the adjacent tissue will hold the ends of the severed muscle together sufficiently to insure union.

If, however, the external opening or openings are so located that the incision required is so long or so tortuous that the severed ends of the muscle are not held in apposition, then it is safer and wiser to operate in two or more steps. In such a fistula some use the multiple-step method. Beginning at the external opening or openings, the channel or channels are incised a short distance toward the sphincter and the internal opening. When the distal end of the incision has healed another incision is made. Thus step by step the external opening is brought closer and closer to the muscle and the internal opening. When all the outlying channels are healed and the new external opening is connected with the internal opening by a short, straight channel, the sphincter itself is then severed in successive steps, working always toward the anal canal.

The advantages claimed for this multiple step operation are two: As no great amount of incising is done at any one step, a local anesthetic is all that is required and the patient is not confined. As all the fibers of the sphincter are not severed at one time there is no danger of fecal incontinence. The disadvantages are that, in extensive fistulas, the repeated anesthetizing and cutting often become discouraging and distasteful to the patient. It also unnecessarily prolongs the time required for a cure. Most patients prefer a little more radical procedure, if thereby the time can be materially shortened without increasing the hazard.

Fortunately this can usually be done by the two-step operation. Beginning at the external opening or openings, all tracts are incised to the edge of the sphincter muscle opposite the internal opening, as the first step. Whether the required incision be long or short, single or multiple, deep or superficial, straight or tortuous, the ultimate results will not be compromised. The sphincter is left intact. To insure the patency of the new external opening at the muscle's edge, a silk or linen suture may be passed through the internal opening, brought down through the anal canal, and the two ends loosely and securely tied together. Such a suture will surround only the muscle and the lining of the anal canal.

When all these incised channels have healed, all that should remain of the fistula is a short, straight channel connecting the new external opening with the internal opening between the two sphincters. This tract can then safely be incised, cutting through the muscle fibers at right angles. The adjacent tissues, which were severed at the first step are now healed in their normal relations, and should hold the cut ends of the sphincter in apposition, thus insuring ultimate union and continence.

However, if one wishes to make doubly sure, the muscle itself may be severed in more than one step or the muscle may be completely incised and the mucocu-

taneous lining of the anal canal may be left intact till the muscle is healed. This subtegumentary tract can then be painlessly incised, leaving only a fissure which quickly heals. If the muscle and lining of the anal canal are not completely incised at the second step, the loose ligature above referred to should be allowed to remain till the operation is completed. The two-step operation gives all the security of the multiple step, with a material saving of time and patience in most cases.

In those rather uncommon fistulas where both internal and external sphincters are involved, anything less than a two-step operation is a hazard to which neither patient or physician should be exposed. In this type of fistula, begin at the external opening or openings and incise all tracts to the edge of the sphincter, as before described. Insert the loose ligature to keep the new external opening patent. When the incision has fully healed, the muscle may be incised in not less than two steps. The lining of the anal canal is better left intact until healing of the muscles is complete. With good judgment and skill, even this type of fistula can usually be cured.

Because a fistulous tract is found running as high as or higher than the internal sphincter, does not necessarily mean that the opening is above that muscle. The tract may extend far above the internal opening, which will usually be found between the sphincters. Free drainage of these deeper tracts by free incision away from the rectum, together with proper after-treatment, will usually heal them down to the internal opening. The treatment then is that already described for other fistulas.

After-Treatment

The after-treatment of an operation for fistula is as important as the operation itself. After the operation the incision should be packed lightly with cotton or gauze, just tight enough to prevent bleeding. Cotton stops bleeding better than gauze. This first packing may be left two or three days. At this time it will come away with little discomfort or bleeding. Thereafter the incision should be dressed daily for several days, then every other day will usually suffice. After the first dressing the incision is drained, not packed, with a little gauze. Packing keeps the tissues apart and delays healing. Just enough should be used to prevent bridging and make the wound heal from the bottom.

Common causes for failure to secure satisfactory results in operating for anorectal fistula are:

1. Improper technic.
2. Failure to locate the internal opening.
3. Failure to locate and open all tracts.
4. Improper after-attention.

While no brief epitome on this subject can do it justice, the preceding suggestions and cautions will serve as a guide to more successful results.

Jefferson Bldg.

Local Anesthesia in Office Practice

Many patients who will not enter a hospital will consent to a minor operation performed in the office. Also there are many borderline cases which can be treated surgically, either in the hospital or office, and much expense is saved to the patient if the surgeon selects the office.

The scope of local anesthesia in office practice may be made very broad. It is of very special advantage to the isolated practitioner of medicine.

The use of local anesthesia demands special training and equipment and no one who is not prepared to employ it skillfully should essay its use. However, with proper training and equipment, local anesthesia may be employed in office practice with a great deal of satisfaction to physician and patient.—Dr. R. E. Farr, *of Minneapolis, in* Am. J. Surg., *Feb.*, 1930.

Coital Interlocking

A Physiologic Discovery

By Marie Carmichael Stopes, D.Sc., Ph.D., F.L.S., *London, Eng.*
Fellow of University College (London);
President of the Society for Constructive Birth Control and Racial Progress

A *FEW* years ago, I believe, no suggestion of the possibility of an interlocking between the glans penis and the cervical canal during the act of coitus in human beings was current, so that when I first made the discovery that such interlocking not only can, but does, exist, I waited with some caution for confirmatory cases to accumulate before publishing the observations.

The brief reference I made to the facts in the first edition of my textbook "Contraception—Its Theory, History and Practice" (1923) has since been taken up, now and then, by medical men, as, for instance, by Sir Archdall Reid, M.D., in *Nature*, in October, 1924, where he disagreed with my "belief" regarding coital interlocking.

As the fact is, in my opinion, one of first-rate importance concerning the mechanism of human coitus, and has bearings on several aspects of sex life, I think it is now time to state explicitly that it is not a "belief," but a statement of physiologic fact, based on observations of actual cases.

This physiologic discovery originated in the direct observation in myself, extended over several years, of the spontaneous opening of the cervical canal, which is normally compact and small with a non-lacerated wall, and has now been confirmed by 48 cases of women who have personally attended for examination at the pioneer Clinic for Constructive Birth Control, in addition to others who have told me about their own cases, in correspondence or verbally.

There are two types of women in whom the cervix may interlock with the glans penis, each physiologically and psychologically somewhat different: (1) the woman who has a normally closed os, which opens spontaneously under certain stimuli of coitus, closing round the glans penis as a result of the stress of sexual excitation; and (2) the woman who, having borne a child or children, thereafter has a permanently stretched os, which remains open and sagging, and thus cannot but admit the glans penis involuntarily during the normal coital act.

The two types of cases are, of course, physiologically different, but from the point of view of the application of contraceptive measures, they present a similar problem. In both such cases it will be perceived that, if the os and the glans penis are in any degree interlocked, the ejection of the spermatic fluid will be directly into the uterus, and thus contraceptives such as medicated suppositories inserted in the vagina will be foredoomed to failure. For this type of case, only two possible methods of contraception are likely to be secure: either the condom, worn by the man (which, owing to objections on other grounds, is generally to be condemned), or a vaginal cap in some form, worn by the woman, to interpose a layer of material (of which thin rubber seems the most suitable) between the spermatic fluid and the os.

The fact of the existence of coital interlocking in *Homo sapiens*, however, is what we are considering now, not the bearing of this fact on other problems. Concerning the recorded cases attending the Clinic, it is interesting to note that, numerically, they approximated to 1 percent; i. e., 39 of the 4,200 who had already borne children. If approximately 1 percent of those attending the Clinic are of this type, it may fairly be argued that there may be, in the total population of the country, something not far short of 20,000 women in whom such a feature exists, but is hitherto undetected.

From the point of view of the application of contraceptive measures, this throws an interesting side-light on the necessity to use the vaginal cap, for by any other method which women can use, there are 20,000 potential "failures" of this type.

Of our cases of Type I, the twelve with

the most noticeably large os had all borne several children, the total number of pregnancies being:

2	with three children	6
2	with four children	8
1	with five children	5
2	with eight children	16
3	with nine children	27
2	with eleven children	22
12	cases with	84 children,

or an average of 7.0 children each.

It is obvious, therefore, that fertility and this enlarged type of os go together. How far the large os is the direct source of fertility, or the numerous children borne the cause of the enlarged os, one cannot yet say, but the former seems indicated by the fact that the majority of women (many of whom have had as many children as this, or more) who have visited the Clinic do not have a large os, and in spite of their big families the cervical opening contracts and normally remains closed in the usual way.

At present there are no means of knowing how many women with a normally small os can, with suitable stimulus, expand the os so as to interlock with the glans. It will be realized that it is an exceptionally difficult point about which to obtain data, for few women are sufficiently acquainted with their own reactions or anatomy to enable them to recognize the phenomenon as distinct from the usual penetration of the vaginal canal. The cases I have now accumulated (one of them from a medical man, who vouches for the fact in his own coital experience) number only 59. But that I have so many seems a guarantee that the phenomenon will, later on, be found not to be so rare as might be expected, if one judged only from the incredulous air which the fact sometimes induces in otherwise open-minded investigators.

My first preliminary statement, made seven years ago, of the existence of the interlocking of the glans penis and the cervical canal in coitus was poo-poohed by some, on the ground that as the cervical canal has no voluntarily controlled muscles, so it must be "impossible that it could take place," and therefore that it does not take place!

Fortunately, however, my first observations are being substantiated and it is a fact that actual interlocking not only can, but does take place. That this fact demands a mechanism hitherto unrecognized, does not dispose of the fact. To suggest physiologic processes by which this action comes into play would take us too far into the realms of theory at present, but as it is correlated with a direct, localized sex stimulus, it may perhaps be suggestive to record another physiologic feature which has not hitherto been fully considered, and this is the intense contraction of the uterus under the stimulus of sex excitement, even without any physical contact at all. That the uterus itself can contract violently at the mere thought of sex union with the person whose individuality acts as the stimulus, is, of course, known to many women from personal experience, although it is excluded from presentation in textbooks. If a rubber model of the uterus be imagined, the sudden and violent contraction of the body of the uterus is seen to allow a stretching of the circular muscle of the os, which might easily be sufficient for the entry of an active glans penis.

An interesting case conforming to my theory has come to hand and is recorded by Dr. Jay (see the *British Medical Journal* of August 10, 1929, page 284), of the finding, in the cervical canal itself, of a portion of a condom which had been torn away from the penis. The criticism of this observation, made in a later issue of the *British Medical Journal*, May 3, 1930, page 848, by Dr. Blacker, was that he could not see "how the muscular conformation of the uterus would allow of spontaneous cervical dilation." When a fact is experienced in nature and we do not see *how* it can happen, this should afford a stimulus for us to reduce our ignorance of the factors surrounding the observed phenomenon. At any rate this observed *fact* supports my observed *facts*, and even the best of theories must go down before even one fact.

Thus, I hope, the existence of what I have called "cervical interlocking" may lead to investigations enlarging the boundaries of our limited knowledge of coitus in *Homo sapiens*.

Givons Grove, Leatherhead, Surrey.

The Treatment of Gastric and Duodenal Ulcers

With Special Reference to the Use of Barium

By J. E. Engstad, M.D., *Grand Forks, N. D.*

A HOST of physiologists have, for the last five or six decades, devoted a great deal of time and energy to solve the mystery of digestion, and especially of the function of the stomach, and the greatest among these is, by common consent, Prof. I. P. Pavlov, of Leningrad, Russia. Other investigators, among them C. H. Contgean and Drs. Bolton, Goodhart, and Lintvereff, have contributed their experiments to the stock of common knowledge of digestion. Boldyreff held that the neutralization of the acid in the whole stomach, as well as the isolated parts, was caused by the alkaline juices flowing upward through the pylorus into that organ. Other investigators have observed that normal pancreatic juice comes into the stomach under certain circumstances.

To quote from Boldyreff:

"In my investigations I have often observed that the alkaline pancreatic juice, in normal condition, comes into the stomach under certain circumstances, and therefore I decided that the neutralization of normal juices in the stomach was probably due to pancreatic juices coming into the stomach from the intestines. My assistant investigator proved that this opinion was right and that the gastric juice is actually neutralized in the stomach by the alkalinity of the pancreatic juice coming, with other systemic juices, into the stomach from the duodenum."

Boldyreff's description of his experiments on the cause of gastric alkalinization is succinctly summarized in three principles:

"1.—Regurgitation of natural pancreatic and intestinal juices and bile mixture into the stomach, with fat introduced into it by mouth or directly, through a gastric fistula.

"2.—Regurgitation into the stomach of a natural mixture of pancreatic and intestinal juices and bile, with the introduction into any empty stomach or during digestion of large quantities of hydrochloric acid or other acids; and also with a long-continued secretion of gastric juice in an empty stomach.

"3.—Spontaneous regurgitation into the empty stomach, at alkaline reaction, of natural pancreatic and intestinal juices and bile mixture, happening without any visible external causes."

The Alkali Treatment

The literature on the etiology, pathology and treatment of gastric ulcers is voluminous. Since Vetleson, of Oslo, in 1882, published his work on "*Ulcus et Delitatio Ventriculi*," medical literature has been replete with contributions by the leaders in this specialty of internal medicine. Most of the contributors on this subject have laid special stress on a diet which is to minimize the activity of the acid-producing glands of the stomach. In the last decade physicians have laid special stress on the advisability of neutralizing the natural acids in this viscus, which is a logical conclusion, if we reason from the postulate that both large and small ulcers are due to the activating peptones and free muriatic acid commonly found in this part of the digestive tract, if not to regurgitated pancreatic fluids.

The observing physician, after obtaining a detailed and complete history of the average patient, is impressed by the habit of self-medication, and especially with the combination of alkalies, lately prescribed by a large majority of physicians—a treatment which is neither logical nor based on the physiologic functions of the stomach. It logically follows that, if the free and combined acids in the stomach are to be neutralized by excessive doses of alkali, the patient's diet must be starch-free, which would be incompatable with the proper digestion of proteids and fats. Further, physiologists hold that the acid-forming glands of the stomach are capable, not only of doubling the output of the hydrochloric acid, but under favorable conditions and for a limited period of time, they can increase the output of acids tenfold.

Most of the writers on the subject have laid special stress on a starch-free diet, with the view of minimizing the supposed over-activity of acid glands in the stomach —an opinion held by most of the clin-

icians for the last twenty to thirty years. During the last two decades of the last century and the first of this, the majority of practitioners advocated a diet containing a minimum amount of starch and the maximum amount of proteids and fats, supplementing this diet by a muriatic acid-pepsin mixture, upon the assumption that the addition of a small amount of acid would, to a great degree, minimize the excessive acid secretion in the gastric juices.

It was during the first decade of the present century that the German school of therapeutic nihilism became the vogue in this country. However, the German school advocated taking the "Kur" at one of the numerous spas in Europe, where the votaries of this theory could drink enormous quantities of hot and strongly alkaline water, which acted as a violent cathartic. This water was also bottled and was prescribed by a large number of medical men. For those who could not take the "Kur" at the springs, the commercial interests dictated that the salts of this water, and also from such springs as Saratoga, in this country, should become a marketable product, which was recommended by its sponsors as a cure for all the ailments to which human flesh is heir. It was specially recommended for the treatment of ulcers of the stomach and kindred digestive ailments. The vogue of the alkali treatment for ulcer of the stomach had its inception in this medication.

It is my opinion that the "Kur" was a highly beneficial type of medication, for those of the socalled upper classes, whose members consumed a minimum amount of water and a maximum amount of rich food, with such resulting disorders as constipation and a lowered rate of metabolism. If these waters are taken in sufficient quantities every day for one or two weeks—long enough to cause profuse cathartic action—they have a marked beneficial effect. But the administration of chemical combinations of alkalis, with little or no cathartic action, with a view to minimizing the acid contents in the stomach, has an entirely different effect on the stomach contents from those observed in the patients taking the "Kur" in Bohemia.

To the average physician it seems illogical to administer an alkali at short intervals and in such large doses that it will effectively neutralize the acids secreted by the acid-producing glands in the stomach. It is held, by both physiologists and gastrologists, that the frequent administration of an alkali at first stimulates the peptic and acid-producing glands to increase the formation of acid and pepsin in the viscus, which is a natural response of the function of the organ.

Because the stomach is a self acid-regulating organ, with a function of neutralizing an excess of acid through the regurgitation of the alkaline juices and enzymes in the duodenum, it does not seem logical to introduce into this organ large quantities of active alkalies with the view of mechanically and chemically neutralizing the natural acidity of the stomach, for the purpose of producing an inhibiting, as well as curative, alkalosis.

During the decades when we administered small doses of muriatic acid, fortified with pepsin, in my experience, greater benefit resulted because the distressing symptoms of one or more ulcers, either of the stomach or duodenum, disappeared and the majority of patients made an uninterrupted recovery.

Considering that the stomach and the duodenum have a self-regulating function, under normal conditions without any mechanical obstruction at the pyloric end of the stomach, it seems illogical to resort either to a total neutralization of all the acids in the stomach, by the administration of alkalies, or to the administration of natural acids, except in cases where the peptic glands of the stomach are in a state of dysfunction.

Barium Treatment

In the last three or four years I have, in a number of cases, treated my patients with a diet consisting principally of milk, raw meat, eggs and animal gelatin, in the form of soups and vegetables, with marked beneficial results. Where there has been sour eructation from the stomach or where lavage has revealed excessive activity of both free and combined acids, the milk has been fortified by from 5 to 10 percent of lime water. In addition to the diet, large doses of barium have been administered. Under this treatment, the usual pain and soreness over the epigastric region disappear. There is also a marked increase in tolerance to food and a cessation of regurgitation and eructation of gas. This amelioration of the most distressing symptoms is striking, both to the patient and the phy-

sician. In the majority of cases I have dispensed with all medication, with the exception of from 10 to 20 Gm. of barium sulphate, immediately before or after the ingestion of food, from three to five times a day. In cases of pain or distress, small doses of this neutral chemical are administered for their amelioration.

The dietetic regime has been a modified milk diet, with a daily schedule of from three to five quarts, preferably equal parts of sweet and sour milk, taken alternately, one glass sweet milk and one glass artificially or naturally soured milk. In addition to this milk, I allow a couple of poached eggs per diem, a serving of breakfast food with maple syrup, a slice of well-toasted bread, fresh boiled fish, and half-raw hamburger steak; vegetables and fruit, ad libitum.

Conclusions

1.—Whether ulcers of the duodenum and stomach are due to the enzymic action of the pancreatic juices regurgitated during intervals when muriatic acid is at low ebb in the stomach, is an unsolved problem.

2.—Alkalies may increase the digestive action on the mucous membrane of the stomach.

3.—Numerous experiments have confirmed the hypothesis that the administration of small quantities of muriatic acid will, not only lessen the amount secreted by the acid-forming glands in the stomach, but will, if this ingestion is long continued, cause a marked diminution in their activity of forming muriatic acid.

4.—An inert substance, barium sulphate, faintly alkaline in reaction, acts as an emollient, by depositing a protective covering over the ulcerated and inflamed surfaces of the stomach.

The Hard of Hearing Patient

Facts the Family Physician Should Know

By Harold Hays, M.D., F.A.C.S., *New York City*

STARTLING as it may seem, we are now getting to the stage where we know something about deafened people—how to prevent deafness; how to make wholesale tests of the hearing of school children; how to treat the ears of these children so that many of them will not become hopelessly deafened adults; how to study and investigate deafness in adults so that there is a possibility of improving their hearing; and finally how to reconstruct the lives of very hard of hearing individuals so that they may get out of the despondent state in which one often finds them.

It has frequently been the custom in the past for the general practitioner to shrug his shoulders and intimate (to put it mildly) that there was very little to be done for a class of people who lead a hopeless social and economic existence. He recalls that the specialist, in the past, has been content to run a catheter into the eustachian tubes, blow in some air and say, "That's that, let us hope for the best." And, after his patient has gone the rounds of the quacks, because no reputable man seemed to be able to do anything, he has come back to him as bad as ever.

But times have changed and many a serious-minded otologist is dreaming of a not-far-distant future when he will be able to do something for his deafened patient. These men would rather improve hearing than perform a good mastoid operation. But, if one is to do anything for such patients, one must have the cooperation of the general practitioner, for he is the man who brings his patient into the world, takes him over life's seas of trouble and frequently follows him to his final resting place.

The Deafened Child

How many general practitioners know that there are over three million deafened children in the schools of our country who are sufficiently hard of hearing to retard them in their studies? Ernest Elmo Calkins, a deaf man, wrote a very interesting book called "Louder, please," a few years ago. When he was a child he was unable to get along well in school. He was con-

sidered stupid by his teacher. He was punished at home and his parents considered him a hopeless proposition. Being a child, of course he didn't realize that he was hard of hearing and that his deafness was growing worse. When he was about ten years old someone suspected the trouble, but by that time it was too late to do anything. Today, he is a very deaf man but he has fought his handicap, is a brilliant writer and a most successful advertising man. Now, if he had been taken in hand by a wide-awake family physician, when the trouble first started, I have no doubt that a great deal of his hearing might have been saved. Many a time, a similar child is considered stupid in school and is placed in the "dunce" class when his mental coefficient is above normal.

While visiting the Detroit School for the Deaf a few years ago, Miss Van Iderstine pointed out to me a little girl who had been sent to her from one of the public schools because she could not keep up with the other pupils. Tests of her hearing showed that she was quite deficient. Her mental coefficient was above one hundred percent. While in Miss Van Iderstine's school, she was taught lip-reading and was placed under the care of Dr. Emil Amberg, one of Detroit's most capable otologists. At the end of a year her hearing had greatly improved, she had become a good lip-reader and she had lost her inferiority complex. She was returned to her regular school where, in a short time, she excelled the other pupils.

Certain studious and earnest otologists are keenly interested in the study of the hard of hearing child, and clinics for the prevention of deafness will spring into being in various parts of the country. Deafness can be prevented in many cases. Hearing can be improved in childhood and often hearing can be restored to normal. It is a painstaking task and the family physician, the one in most intimate contact with the patient, is the one who can start the child in the right direction. Dr. Edmund Prince Fowler has such a clinic at the Manhattan Eye, Ear and Throat Hospital in New York City and is definitely proving certain facts which I promulgated a number of years ago when maintaining a private clinic for hard of hearing children. Among these facts, so valuable to the family physician, are the following:

1.—Hard of hearing children often go undiscovered until proper hearing tests are made to establish the fact that their stupidity in school is due to impaired hearing.

2.—Deafness is preventable, provided the ears and general condition of the patient are taken care of at the proper time.

3.—Many of these children are suffering from repeated colds in the head (sinus trouble), repeated ear aches, running ears, tonsils and adenoids and impaired vitality.

4.—The hearing acuity cannot be improved unless one is able to overcome the impaired resistance of the child.

5.—Most of these children are lacking in vitamins and should be fed on cod-liver oil, butter and unskimmed milk.

6.—Many of such children live in poor hygienic surroundings and do not take sufficient exercise.

The Deafened Adult

But what are we going to do for older people who are hard of hearing? Theirs has been a hopeless state. Does one realize how many of them there are in the United States? The best way to answer the question is to imaginatively get at the files of one of the companies selling electric hearing devices. Most of the larger ones are doing a thriving business. They have the names of hundreds of thousands of deafened people who are so hard of hearing that they seek a hearing aid. Add to this the names of the hundreds of thousands who, although deaf, do not wish to use a hearing aid and one arrives at a figure which ascends to the millions. The otologist sees very few of these people who, in many instances, are told that medical science can offer them nothing.

It is very unfortunate that the mental attitude of the public tends that way. In these modern times much can be done, not only by the otologist, but by the family physician.

Practical facts will best illustrate my point. Let us inquire into the physiology of hearing. We are dealing with a complex mechanism which no one but God Himself would place in a human body. Unlike the eye, into which direct impulses are sent, the ear mechanism is a clumsy arrangement which, praise be to the Lord, works efficiently for most of us. A sound wave strikes the ear drum, which vibrates, sets in motion three little bones which no mechanic could imitate, transmits the wave to the internal ear where fluid is set in motion and finally, by playing on the organ

of Corti, the wave is transmitted to the auditory nerve and brain, where it is interpreted.

It is my belief (yet to be proved) that there is an amplifying apparatus in this mechanism somewhere. But the important fact (already proved) is that nerve impulses create carbon dioxide in the fatigue phase and that oxygen stimulation must take place before the nerve can function properly again. It can, therefore, be readily understood that, regardless of mechanical perfection of the hearing apparatus, it will not be able to bring about desired effects if the function of the auditory nerve is interfered with, either because of local disease or general body indisposition. One must add to this that mental or emotional states have their direct effect upon nerve impulses and may aggravate a hearing defect as much as a physical abnormality.

Let me deal with a few concrete illustrations.

1.—A patient of mine, a school teacher, who for many years has been quite hard of hearing, went to Yellowstone Park for the summer and spent most of her time on horseback. She returned to New York at the end of three months. Hearing tests showed an improvement of thirty percent and the hearing has remained improved for five years without treatment.

2.—A prominent physician in a near-by city consulted me because he has an almost total deafness, with tinnitus in his left ear. Examination with the nasopharyngoscope showed an edematous condition of his left eustachian tube. Recalling a series of carbuncles he had had a few years previously, I suggested a blood chemistry study, which showed increased sugar. This condition was corrected, whereupon his tinnitus disappeared and his hearing returned to almost normal.

3.—A young girl, a college student, was found to have a sixty percent loss of hearing in both ears. Physical examination was practically negative, except for a slight thyroid disturbance. This patient had a definite complex against her mother, who was a very difficult woman to get along with. Every time she had an argument with her mother, a definite emotional explosion took place and her hearing became decidedly worse. By taking her away from the family influence and working on her psychologically, her hearing was restored to normal.

These are only a few of thousands of cases.

I am eager to impress upon the family physician the fact that abnormal physical and mental states influence hearing acuity and, if one wishes to obtain any worthwhile result, one must study each case as a separate entity and eliminate every factor which diminishes the patient's resistance. Seeing a patient twice a week to inflate his ears is useless, in the majority of cases. I am so convinced that this is a wrong procedure that, today, I insist on all hard of hearing patients going to my private hospital for at least four weeks. They are not kept in bed, but they are fully occupied with one treatment or another all day long and, what is as much to the point, their time is mine and, when they come into the office for local treatment, they are in a completely relaxed condition. At first they undergo a complete physical examination, basal metabolism test, blood chemistry and x-ray studies, etc. Definite types of head massage are given them. Also hypodermic injections of iron and arsenic and high colonic irrigations are given.

The type of local treatment they receive depends on the condition found. X-ray treatments to the naso-pharynx, diathermy, dilation and treatment to the eustachian tubes, pneumomassage, etc. The results have been most gratifying and I am hoping that, in the course of time, I can analyze a sufficient number of cases to come to definite conclusions.

Very few family physicians know that accurate measurements of hearing may now be made with an instrument called an audiometer. This electric device will allow one to test hearing from 156 to 8,000 double vibrations, corresponding to tuning forks of the same range. The test is charted on a card, called an audiogram, and from these charts a definite percentage of hearing loss can be worked out. By comparing tests, best made by an assistant, at repeated intervals, one is able to visualize any changes. The up-to-date otologist today makes use of his tuning forks only in making a differential diagnosis.

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FOR RADIOLOGY
HENRY SCHMITZ, M.D., F.A.C.S., F.A.C.R.
WILBUR H. GILMORE, M.D.

Radioactive Paint

THE newspapers report the death of the sixteenth victim of poisoning from swallowing radioactive paint. Unfortunately the newspapers and others who should have known better persisted in speaking of "radium paint," and of the condition as "radium poisoning." This has created in the public mind a fear of radioactive treatments.

As a matter of fact, the lethal paint consisted of zinc sulphide, made luminous by a mixture of 20 percent radium and 80 percent mesothorium (as salts). Now mesothorium contains radiothorium, in equilibrium or artificially added to obtain maximum ionization and fluorescence of the zinc sulphide. The distinction is clearly evident. Radon and radium salts, in proper effective dosage, are administered intravenously with perfect safety. Mesothorium and thoron are not used, because they are highly toxic, especially to the blood-making organs. They emit five ions of helium (alpha particles), while radium emits only four, according to Martland,* and as alpha particles have a high velocity, a material bulk and a positive electric charge, a 25-percent increase in their relative proportion would be accompanied by increased destructiveness.

Then again, the minimum amount of radioactive elements absorbed by the workers, who, it will be recalled, licked their brushes while painting watch dials, accumulated in the period of their occupation to an amount many times exceeding the maximum equivalent therapeutic dose of radioactivity from radium or radon.

—F. T. W.

*Jour. A.M.A., Dec. 5, 1925, p. 1769 et seq.

Chilblains Treated by Paraffin Wax and Ultraviolet Rays

In *Practitioner*, Lon., Oct., 1930, Dr. F. H. Humphris draws attention to the treatment of unbroken chilblains by paraffin wax baths. The feet or hands are placed for about 20 minutes in a bath of melted paraffin wax, kept, under electric heat control, at a temperature of 120° to 130°F. The part under treatment is then withdrawn, allowed to cool and the wax peeled off. Two such baths usually suffice.

For broken chilblains, the daily application of a mild dose of ultraviolet rays (a second-degree plus or a third-degree minus erythema dose) is employed.

In both treatments the cure depends upon stimulation of the circulation.

The High-Frequency Machine

By Burton Baker Grover, M.D., *Colorado Springs, Colo.*

IT MAY be of interest to review briefly the history of the development of the high-frequency current.

In 1881, Dr. William J. Morton, a New York physician, produced a new current from the static machine. Instead of connecting the patient to the inner coatings of the Leyden jars, as was the custom, he conceived the idea that, by connecting the patient to the outer coating of the jars, he would have a current capable of producing entirely different effects. Connection of the outer coatings of the jars resulted in an induced and oscillating current. Morton gave to this new current the name *static induced*. It is oscillatory in character and of a higher frequency than any heretofore discovered current; so it may be truthfully stated that Morton discovered the high-frequency current. While the frequency of the static induced current is high, in comparison with any current previously produced, it is considered a current of low frequency when compared with the frequency of present-day productions. At the present time, when high frequency currents are spoken of, it is meant that they are stepped up so high in frequency of oscillations that they are incapable of producing neuro-muscular effects.

The high-frequency or static induced current discovered by Morton is capable of producing mild muscular contraction or tetanic spasm, the result being proportional to the current potential. There are no painful sensations connected with the application of the current, unless too high a voltage is employed. The current potential is controlled by an adjustable spark gap in the primary or inner coating jar circuit. By a sliding movement of one terminal of the gap, the current through the patient is controlled, and by skillful operation a true sinusoidal current is produced. In many instances, this form of sinusoidal current is to be preferred to currents from present-day sinusoidal machines.

A few years later, in 1887, Hertz, a German physicist, is said to have discovered electromagnetic waves which formed the basis for wireless telegraphy. He found that waves produced by the spark of a simple device called the oscillator, could be detected by a loop of wire known as the resonator, and he was able to show the reflection, refraction, diffraction and polarization of the waves. The discoveries of Hertz demonstrated the practical possibilities of radio transmission.

In 1890, Prof. d'Arsonval, probably acting on the results of Morton's work, constructed a high-frequency apparatus by connecting the outer coatings of the Leyden jars of a static machine with a coil of coarse copper wire, wound in the form of a solenoid. This addition to the Morton apparatus greatly increased the inductance and frequency of the current. Later he employed a Rhumkorff coil which displaced the static machine as a generator of high-potential curents. While the current from this apparatus is oscillatory in character and of a high rate of frequency, the oscillations are quickly damped and the time interval between the groups of oscillations so prolonged that the current does not produce much heat.

D'Arsonval found that, beyond a certain number of excitations per second, the muscular contraction phenomena decrease in a measure as the number of alternations increases, and he constructed an alternator capable of 10,000 alternations per second. In December, 1890, he again took up the same experiments with the devices of Hertz and Lodge and, in April, 1891, a few months before the memorable experiment of Tesla, showed that a current of high frequency and of great strength could traverse the body without untoward results and, in so doing, decrease the excitability of the tissues, lower blood pressure and increase the action of respiratory combustion.

Morton made local applications with his interrupted static current, seeking especially to produce a therapeutic action on muscles and nerves. D'Arsonval subjected his subjects to a general action, which he obtained either by contact or autoconduction. He confined his studies to the changes in nutrition resulting from the use of the high-frequency current.

In 1893, Oudin, by adding a spiral to

one terminal of the d'Arsonval solenoid, produced a high-frequency current of extremely high tension (voltage). While Oudin insisted that the local application of sparks from his coil produced general reactions, it was left to others to develop his coil further, into what is now known as a monoterminal current of extremely high tension, the principal use of which, today, is desiccation.

In December 1891, Nikola Tesla noted that, when the body was traversed by high-frequency currents, heat was perceived, and suggested their use in medicine. However, very little was accomplished until the early part of the twentieth century when, in 1907, Nagleschmidt demonstrated that high-frequency currents cause a heating through of the tissues and joints. Nagleschmidt gave to the procedure the name, *diathermy*.

The first high-frequency machine made in America consisted of a Tesla coil and a paper or glass condenser and was energized by a static machine. While these machines produced a current of high tension and frequency, they were of little account for diathermy. Not much progress was made in the high-frequency machine until the adoption of the static transformer for stepping up the ordinary city light current to currents of very high tension.

Types and Powers of Machines

High-frequency machines, as devised by different manufacturers, vary greatly in construction, therefore there is a corresponding variety in the quality of currents produced. The thermic intensity is often too great or too little; sparkgaps are many and of various types, some yielding many and some few trains of oscillations per cycle of current; some transformers are wound to produce very high peak voltages, others with low peak voltages, varying from 5,000 to 60,000 peak volts. Not so long ago it was thought that a transformer must be very massive and immersed in oil; now efficient transformers are made to occupy very little space and the immersion in oil is obviated by proper grounding. Some machines yield quickly-damped amplitude of oscillations; while others are constructed to yield longer trains with minimum of space between the groups. Some machines are provided with inductance coils of the solenoid type; others with high-tension pancake spirals; still others with combinations of the two. Some have true Oudin coils; others take the monoterminal current from the terminal of the Tesla coil and call it Oudin. Some machines have three distinct and separate coils, which furnish currents of quantity, currents of tension and monoterminal currents of extremely high tension and frequency, and still others with variable frequencies. Some machines are provided with Leyden jar condensers; others with large surface condensers; others with a battery of condensers. Some machines provide choke-coil control; others accomplish the result by taps on the primary of the transformer.

Most machines have several terminals, designated as d'Arsonval, Tesla and Oudin, as well as terminals marked high and low frequency. The marking of the terminals, in most respects, is important. However, on some machines, the designations mislead the physician, especially one who does not understand the principles governing the different types of high-frequency current, as shown by these examples: (1) The terminal of the secondary of the Tesla coil does not deliver the current originally described by Oudin; (2) the primary of a pancake coil, the terminals of which are sometimes designated d'Arsonval, does not deliver the type of current originally described by d'Arsonval; (3) the therapeutic effects of a primary Tesla current differ from those of a solenoid current of the same intensity. Want of standardization of machines is unfortunate, and this means that there can be no standardization of technic until we have standardized the machines.

There are thousands of physicians in the United States who are dabbling in physical therapy, and comparatively few thoroughly understand the functions of their machines. To the trite saying, "Know thyself," may be pertinently added, *Know thine own machine*. Many physicians consider it beneath their dignity to study fundamentals, and so long as this condition of affairs exist, there will be no standardization of either machines or technic.

In choosing an apparatus for the production of a high-frequency current, a thorough understanding of the principles involved is of first importance. The choice of a particular type of machine depends upon the work it is desired to accomplish. If only thermic effects are desired, a ma-

chine should be chosen that will deliver undamped and sustained oscillations. If effects upon the sympathetic nervous and glandular systems are expected, an apparatus yielding damped oscillations should be chosen. If extremely high frequencies (above 5,000,000), are needed, an apparatus yielding sustained oscillations must be chosen. Whether extremely high frequencies are desirable has not yet been determined. For office use, a machine from which currents of quantity, currents of tension and monoterminal currents of high tension are available should be chosen. In this country, solenoid currents with damped oscillations seem to be the ones of choice for diathermy.

For many years, the idea prevailed that the effects of a high-frequency current are due entirely to heat. Of late this idea has been challenged. It is not the amount of heat administered, but the amount *absorbed*, that proves of value in diathermy. It is a lamentable fact that we all have erred in the administration of too-heavy doses in diathermy. The heat-controlling mechanism of the body can care for only a certain amount of heat without ill effects. The construction of neurons and synapses also limits the amount of heat constructively effective.

As a general proposition, machines which deliver currents of quantity are to be chosen for diathermy, and those which deliver currents of high tension and high rates of frequency should be chosen for autocondensation.

A Good High-Frequency Machine

The essentials of a good high-frequency machine for the general practitioner may be summarized as follows: The transformer should be of the closed type and should have the best of insulation, to prevent a breakdown. Transformers not oil-immersed should be machine-grounded. Condensers should be made of the best dielectric and constructed to withstand a greater strain than they will ever be called on to withstand in practical use. The machine should be equipped with an up-to-date, multiple spark gap, with single and master control. The current-flow should be smooth and even at all rates of frequency. The coils should be provided with windings for sufficient voltage for currents of quantity, currents of tension and currents of very high tension. Currents of quantity should be tuned for moderately low frequency, and currents of tension should be tuned for very high frequency. The output of a current of quantity should be sufficient to deliver 800 milliamperes of current to a patient on an autocondensation couch having three inches of dielectric. It should be able to deliver at least 350 milliamperes in hand-to-hand diathermy. Last, but by no means least, the circuit must be in resonance. A high-grade meter and ordinary accessories complete the machine.

Resonance

Experience teaches the vital importance of resonance in any circuit intended for therapeutic purposes. In the construction and assembly of parts of a diathermy machine at the factory, the circuits are tested for resonance by means of oscillators of the type used for testing radio broadcasting and receiving sets. Wave meter tests are inadequate.

What simple test can be made by the physician, in his office, to assure himself that the circuit of his particular diathermy machine is in resonance?

In a machine which is working properly and in resonance, a steady humming sound comes from the spark gap; there will be no sputtering at the gap: when the machine is in resonance, sparks will not sputter beyond the periphery of the points of the gap. Smooth trains of oscillations cannot come from sputtering or noisy spark gaps.

Whenever it becomes necessary to open the spark gap wide, in order to secure sufficient milliamperage, the machine is inadequate. A machine should have sufficient voltage to secure any amount of current desired, and no effort should be made to increase the voltage by widening the gap to a point beyond its efficient operation. Properly constructed machines may be thrown out of resonance by opening the spark gap too widely.

A very simple test may be made by the physician, by placing two electrodes on the same plane of the body and turning on a current of 1,000 milliamperes. If the machine is in resonance, it will be impossible to draw sparks from the skin between the electrodes, unless the distance between them is less than six inches.

Voltage

The influence of voltage on thermal effect, as well as the effect of voltage varia-

tions on the path of the current through the tissues, has been poorly understood, largely because few writers have distinguished peak voltage from effective voltage. Peak voltage is the maximum voltage across the patient, at the beginning of each group or train of oscillations. Effective voltage is that voltage which would send a direct current through the patient, developing within him the same amount of heat as is produced by a damped high-frequency current. In an oscillating current, the values decrease rapidly, from maximum to zero; then comes an interval with no voltage, before the next group of oscillations takes place. If the values of the decreasing voltage of the oscillations were squared; then an average over the time interval, from the beginning of one group of oscillations to the succeeding one, and the square root of this average value taken, the result would be the proximate effective value of the high-frequency voltage.

With a gap yielding, say, 1000 sparks per second, the number of groups of oscillations is approximately 1000 per half-cycle, the interval between the groups being very short. If the gap be opened to a point where twice the voltage is required to break down the resistance of the gap, the groups of oscillations would be reduced in number, the interval of time between the groups would be greatly increased and the efficiency of the current greatly reduced.

High peak voltages mean very little in effectiveness of current values. The greater the number of sparks per second, the smaller will be the peak voltage across the condensers, and consequently across the patient. Peak voltage to break down the resistance of the gap may be raised so as to yield a very much reduced milliamperage through the patient.

A machine is a device for transferring work from one point to another. The advantage of a machine lies in its ability to control force and distance. By the aid of a machine, a small force, acting through a long distance, may be able to replace a large force, acting through a short distance. A machine may multiply enormously the force applied, but can never increase the work done. In other words, the work done by the machine can never exceed the work done on the machine. While we say we raise the 110-volt city light current to forty, fifty or a hundred thousand volts, it must be remembered that such enormous voltages, coming from a transformer, are only experienced momentarily, and that the actual effective voltage cannot exceed that of its source.

Upon the number of groups or trains of oscillations, the number of sparks per second across the gap and perfect resonance depends the efficiency of a diathermy machine.

Ferguson Building.

Matter and Space

The twentieth century has begun to discover that matter has no power of its own; that the atoms are merely bandied about by processes emanating from space; and that all that matter can do is to demonstrate the real happenings, which occur in what we call "empty space."

Our senses tell us only about matter. We therefore use the motions of matter as an index or demonstration of what is occurring. We read the pointer of a meter when we want to measure an electric current, and that is typical of all our experimental methods—in themselves, they are limited to pointer readings. The real meanings of the phenomenon elude us.—Sir Oliver Lodge.

Clinical Research

Problems of clinical research are pressing upon us for solution every day, and it is difficult to see how a physician can escape doing some work of this sort, unless he is thoroughly narcotized by dogmatism—Prof. Torald Sollman, *Western Reserve University.*

The Role of Roentgenology in Psychiatry

By M. J. Hubeny, M.D., *Chicago*

PSYCHIATRY means the study or treatment of mental diseases. One immediately wonders what relation roentgenology bears to this problem. Any problem affecting the human race is always interesting and usually perplexing, and roentgenology plays some part in this branch of medicine, ramifying, as it does, through almost all other branches as well.

There is probably no other group of diseases about which there is such widespread ignorance and misinformation as about those that affect the mind. Physicians and laymen who are well educated and exceptionally accurate in their fund of knowledge, speak of insanity as if it were a single disorder, and have only a very vague knowledge of the different forms of mental diseases, the periods of life in which they appear, their outstanding characteristics and the prognoses.

Mental disorders did not play an important part in ancient history, owing to the fact that the law of survival of the fittest automatically eliminated the defectives and the insane. They were soon stamped out by the struggle for existence. The Romans threw the unfit from the Tarpeian Rock. The Greeks gave them like treatment.

One of the earliest attempts to explain the etiology of mental diseases was made by Plato: "There are two kinds of madness; one arising from human diseases and the other from an inspired deviation from established customs." Hippocrates and Celsus believed in the "black bile theory."

Little progress was made in the beginning of the Christian era. The mental pathology of the New Testament and of the early ages of Christianity was founded on the idea that mental disorder was a "possession of the devil," and the treatment followed along the lines of repulsion, neglect, lashes, chains, solitary confinement and starvation. Speedy death was the inevitable result. Sennert, in the seventeenth century, believed in witchcraft.

Willis, Prochaska and Haller were the first to suspect a relationship between insanity and pathologic changes in the brain. Morgagni had been carrying on pathologic research; he blamed the pineal gland. Then Mendel's research on heredity came to light, followed by the Lamarckian hypothesis of the inheritance of acquired characteristics.

And so, out of this maze of thought, more concrete ideas are being formulated. With increased knowledge, a more appropriate solution of penal and social problems is destined to evolve.

Crime and Disease

Crime and disease are inseparable. They cause so much grief, waste and suffering that every step toward their alleviation should be received with acclamation. Physical hurts receive the attention of the surgeon's knife or the practitioner's pill. For broken minds and twisted characters there has been little cure and less prophylaxis. The public does not truly believe in the evil power of mind over action; it is just beginning to be educated and acclimated to scientific medicine for its physical body.

The complex problem of human behavior is the concern of the psychiatrist. Because there are so many who are slightly, incipiently, mentally queer, the specialist in psychiatry is coming to play a more important part in the ordinary regulation of human behavior, which has, heretofore, been the concern of the policeman, the judge and the lawyer.

The psychiatrist has come to feel that criminal law and methods of legal procedure are largely obsolete and that present penal methods are based upon the ideas of punishment and vengeance, rather than upon any attempt to comprehend the problem of individuals involved. Moreover, the procedure is limited to three solutions: death, imprisonment or a fine.

The problem of the care and treatment of the delinquent psychopath is extremely complex. It necessitates a coordination of the efforts of legislators, alienists, magistrates and societies, for social protection. It is this group, rather than the lay people,

who will be in a position to make a practical solution of this complex problem, although education of the masses is a desirable feature.

Uses of X-Rays

Roentgenology has contact, either diagnostically or therapeutically, with such conditions and their allied phenomena, as thyrotoxicosis, the climacteric, uterine fibroid, thymic disease, dystrophia adiposo-genitalis, et cetera.

The specific citation of the following case will illustrate the point:

Patient a male; age twenty-three years; medical diagnosis, dementia precox; sexual pervert—ultimately killed host. For obvious reasons a more detailed personal history of the case will be omitted.

The roentgenologic examination included the determination of the size of the sella turcica, which was small, although within the normal minimal limits. The chest showed an anterior mediastinal shadow, greatly increased in the transverse dimension and presumably thymic, this opinion being supported by pronounced findings of status lymphaticus. There were four lumbar vertebrae instead of five. A preliminary fluoroscopic examination revealed the colon to be markedly distended with gas.

An examination of the gastrointestinal tract, following the ingestion of an opaque meal, revealed a colon of twice the usual diameter; a marked colonic stasis was present—even at the end of 120 hours, considerable residue was present; the pelvic colon was large and redundant, part of it forming a large loop situated on the left side, the upper margin of which was opposite the second lumbar body and was immovable.

These findings clearly indicate the presence of deviations from the normal, and the question immediately presents itself, are these findings compatible with the conclusion that behavior may also deviate from the normal and influence the person along unsocial lines? This is quite tenable.

It is the chief purpose of this paper to stimulate more observations of this nature, so that proper consideration may be given those unfortunates so afflicted and the people be educated to the view that insanity is a disease or a group of diseases, often resulting in antisocial conduct, to the end that we may institute such procedures as will mitigate the grief which results and afford protection, both to society and to the afflicted ones now known as criminals. It is not a far-fetched idea that altered anatomy may produce, or be significant of, altered physiology, which may express itself in unsocial behavior.

25 E. Washington St.

Clinical Miscellany

Light in the Treatment of Disease

Many newspapers, in commenting on the recent radio broadcast of the United States Public Health Service pertaining to the use of light in the treatment of disease, unfortunately misquoted the Service as condemning the use of lamps emitting ultraviolet rays. It is felt that this misstatement of facts is most unfortunate, for such lamps have unquestionably been shown to be of great value, when used under certain conditions.

It is known that light may have a beneficial effect in certain diseases. Some diseases respond to light treatment more readily than others. The response also depends upon the severity of the disease, the state of immunity, and personal idiosyncrasies. Light has been used with benefit in certain forms of anemia; in the treatment of diseases due to faulty assimilation; in the deficiency diseases, due to lack of vitamins; in tuberculosis of bone, joints, and glands; for the cure of local conditions, such as wounds and ulcers; and for the relief of deep-seated congestion, neuritis and certain skin diseases. Light is of value in the cure and prevention of rickets; it promotes growth; and it is of value in restoring tone and function during convalescence from severe infection.

Since the amount of natural light from the sun, and especially its ultraviolet ray content, varies with the geographic location, the season of the year and such local conditions as the amount of dust, smoke and moisture in the atmosphere, under some conditions, reliance may be placed on sources of artificial radiation. These sources are generally called lamps, or radiators.

Different types of lamps are used for the production of artificial light for therapeutic purposes: First, those that emit heat, light, and ultraviolet rays, in approximately the same proportion as in sunlight; second, those in which ultraviolet rays predominate; and third, those that emit light and heat, but little ultraviolet radiation.

The lamps of the first type have white-hot filaments, or electrodes, which radiate light and heat, and have also incandescent mercury vapor or a carbon arc, which radiates ultraviolet rays. In these lamps, the incandescent mercury vapor, or the carbon arc, is shielded from the person using it by a globe, or plate, of a special kind of glass which cuts off the very short ultraviolet rays which might be harmful. These lamps are so designed that the ultraviolet, rays and heat radiations emitted by them are combined, as nearly as possible, in the same proportions as in natural sunlight. Since the radiation from them is very similar to sunlight, they may, to a certain extent, be used in place of, or as a substitute for, sunlight. If these lamps are to be used in the treatment of any disease or over long continued periods of exposure, one should have the advice of a competent physician. At all times, caution must be observed in exposing one's self to any lamp. When using these lamps it may be necessary to use goggles to protect the eyes.

The second type of lamp, such as the unscreened mercury vapor, or the unscreened carbon arc lamp, emits a large amount of ultraviolet rays of very short wave-length, besides light, heat and antirachitic ultraviolet rays. Such lamps should be used only upon the advice and under the direction of a physician. The large amount of antirachitic ultraviolet rays emitted by them makes them very useful, when operated by the physician, but dangerous when used by the layman without the advice of a physician. For the same reason, such lamps should never be used without goggles to protect the eyes. Excessive or improper use of ultraviolet rays may cause serious injury to the eyes, injury to the skin, serious symptoms in persons with low blood pressure, and unfavorable effects in persons with early tuberculosis. Exposure to ultraviolet radiation may cause restlessness and, in overdoses, anemia. Severe burns are also sometimes experienced.

The third type of lamp is similar to the ordinary incandescent lamp used in electric lighting. It emits both light and heat. The very small amount of ultraviolet radiation emitted by it is of long wave-length and is negligible in quantity. The rays of light and heat from these lamps heat the skin and the superficial tissues. They have been found to be useful in the treatment of rheumatism and similar troubles. The only danger from them is that of a burn, such as would be experienced by exposing the skin in front of a hot fire.

It will be evident, from this discussion of the different types of lamps in use, that a lamp that would be useful for one purpose would not be useful for another, and indeed might have a harmful effect. It is evident that a person without medical training should not select and use a lamp at random, but before purchasing and using a lamp should consult his physician.

U. S. PUBLIC HEALTH SERVICE.
Washington, D. C.

Gonorrheal Ophthalmia

Nothing will kill the gonococci like heat. The incandescent lamp, applied to full toleration with the eyes closed, will cure cases of gonorrheal ophthalmia.—DR. WILLIAM BENHAM SNOW, New York, City.

Storage of Safety X-Ray Film

SINCE it has become apparent that risk is involved in the use of *cellulose nitrate* base x-ray film, under certain conditions, hospitals must decide whether or not they are to spend a relatively large sum of money for vaults, etc., for the storage of *cellulose nitrate* film or whether they will use cellulose acetate, *safety*, film.

Safety X-Ray Films, *Contrast* (cellulose acetate) are rated by the National Board of Fire Underwriters Laboratories as having *somewhat less fire hazard than would be presented by common newsprint paper in the same form and quantity*. This means that *safety* film may be filed and stored like your paper records and, therefore, precludes the necessity of building a vault.

As a matter of convenience, however, it is suggested that the radiographs be placed in manila envelopes and filed in steel filing cabinets. If, in the estimation of the radiologist, the records need more protection, a vault may be built. This, of course, is optional.

Where both types of films are used or stored at the same location in any building, the requirements for nitrocellulose films shall apply.

Existing nitrocellulose radiographs of unusual interest should create no problem, for reduced copies of all radiographs it is desired to keep may be made conveniently on *safety* base film at little expense.

Authoritative statements that concur with the above may be found in a pamphlet, "Hazardous Chemicals and Explosives, Photographic and X-ray Nitrocellulose Film," issued by the National Fire Protection Association, 60 Batterymarch Street, Boston, Mass.

EASTMAN KODAK COMPANY.

Rochester, N. Y.

Applications of Electrotherapy

A series of patients with lacerations, septic wounds and cellulitis were treated successfully with zinc ionization, in the Royal Infirmary, Manchester. Similar results were obtained in cases with matting of tendons and joints in scar tissue. Of 27 cases thus treated by diathermy, zinc ionization, massage and movements to loosen scar tissue, there had only been one failure. Of 36 patients with chronic pain and stiffness following trauma, existing for many months, most were discharged fit for work after about two months of physical therapy.—DR. R. SHAFFER, in *Brit. M. J.* May 3, 1930.

Hydrotherapy in Hypertension and Hypotension

In an uncomplicated case of arterial hypertension, gratifying results may be obtained by the use of daily tepid baths, for 20 to 30 minutes, followed by short cold applications of from 15 to 30 seconds. The electric-light bath of from 8 to 10 minutes, followed by a short cold spray or shower from 90° to 60°F., not to exceed 2 minutes, is another measure by means of which good results are obtained.

Some of the hydriatic measures useful in combating arterial hypotension are: two or three short hot fomentations on abdomen or spine, followed by a cold mitten friction or cold towel rub; short electric light bath (5 minutes), followed by salt rub, then cold shower or spray; hydroelectric bath (sinusoidal current), temperature 90°F. for 5 minutes; 85° for 3 minutes; 80° for 1 minute; dry off with considerable friction.—DR. C. E. STEWART in *Bull. Battle Creek Sanitarium*, Oct., 1930.

Reflectors on Ultraviolet Lamps

The inverse square law regarding intensity of irradiation may be modified when a reflector is used, this latter greatly augmenting the amount that may fall on the patient. The irradiation coming via the reflector is not, however, of the same quality as that reaching him directly, because metals do not reflect radiation so well as they do visible light. The total amount of irradiation with the reflector may be twice as large as without it. This knowledge is important when ordering repeated irradiations of the same quality and quantity.—A L. M. DINGEE, S.B., in *Physic. Therap.*, May, 1930.

Care of Storage Cells

ABSOLUTE cleanliness should be observed in the care of storage cells of the lead plate type. Moisture and dust collecting on the top of the cells form a high-resisting conducting path between the terminals, through which the cell will short circuit and discharge itself.

When adding distilled water to the cells, be careful not to spill it. Keep the cells dry and clean. Wipe the tops of the cells, especially around the terminals and under the connecting straps, with a clean cloth, moistened with ordinary household ammonia.

Never allow the terminals to become corroded. Keep them well covered with vaseline or other heavy grease. If corroded, scrape bright with a metal scraper and cover with vaseline.

Have a regular time for inspecting, charging and adding water, as well as for cleaning. In this way the life of the storage cells will be prolonged.

F. T. WOODBURY, M.D.

New York City.

RECENT ABSTRACTS

Oral Appliance for Radium Treatment

Implantation of radon seeds into the bony structures of the oral cavity is not always desirable. The limited amount of soft tissue in the alveolar ridge and the hard palate makes

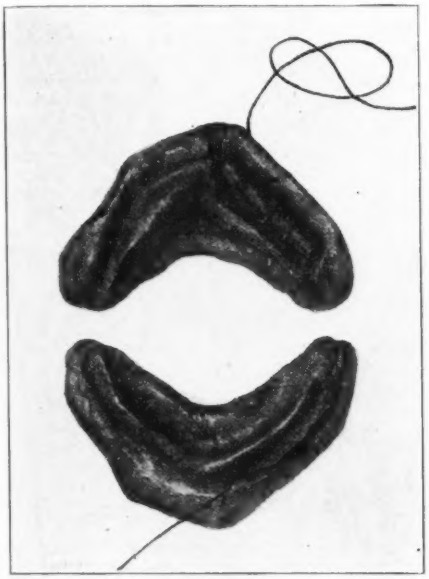

Fig. 1.—Upper and lower surfaces of appliance showing depressions to fit alveolar ridges and a deeper depression for retaining radium in a rubber container.

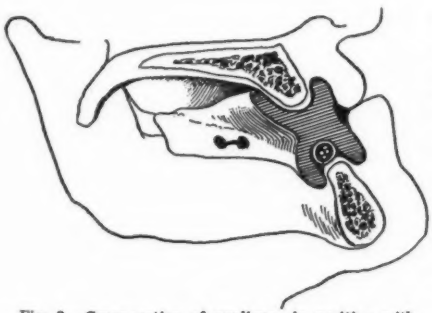

Fig. 2.—Cross-section of appliance in position with radium retained in exact position desired.

the interstitial use of radium very difficult or impossible. In these locations a surface application of radium is indicated.

The great problem in oral applications is to get an applicator that will stay put. In J.A.M.A., Nov. 8, 1930, Drs. J. B. Williams and S. W. Budd, of Richmond, describe a suitable appliance made from dental impressions with a non-metallic, gum-wax base. The accompanying illustrations explain the appliance.

Deafness Treated by High-Frequency Currents

Following an experience of 10 years, Dr. Leroux-Robert, of Paris, recommends, in *Le Monde Méd.*, May 1, 1930, high frequency currents for the treatment of deafness due to non-suppurative otites.

There are two contraindications to this mode of treatment: (1) Too-recent recovery from a suppuration; (2) the presence of vertigo. A bipolar technic may be employed, the active electrode being placed over the mastoid and auditory canal or a unipolar electrode applied at the external auditory meatus.

As a general rule, transauricular electrodiathermy was employed in case of deafness due to adhesive processes, and high-tension currents in other types. The number of treatments varied from 6 to 10 or more, according to the nature of the case, using 30,000 to 40,000 volts for about 10 minutes each day until satisfactory improvement was obtained.

The Cold-Quartz Mercury Ultraviolet Lamp

In *Med. Herald, Physic. Therap. & Endocrine Survey*, June, 1930, Dr. F. F. Strong sketches the development of the Cold-Quartz mercury ultraviolet lamp, the unique features of which are as follows:

1.—The Cold-Quartz, gas-ionized mercury arc operates at a temperature of about 115° F., whereas the quartz-mercury arc operates at a temperature above 1000°F. This entails large heat losses and necessitates cumbersome cooling devices. In this connection it may be noted that, whereas treatment with the quartz-mercury arc at distances of less than 15 inches is very liable to produce a serious heat burn, the cold mercury apparatus may be used in actual contact with the body.

2.—The Cold-Quartz apparatus, used for general treatment, consumes about 75 watts; while the orificial unit draws from 15 to 25 watts. Both the general and the orificial units operate on commercial frequencies.

3.—Judging from the results obtained in the laboratory, the new Cold-Quartz apparatus should have a virtually indefinite life. The output does not lessen with the age of the apparatus. This is very important in estimating dosage.

4.—The fact that the quartz tube containing the radiant mercury gas may be brought in direct contact with the surface for treatment, prevents losses of light from air or water absorption.

5.—The bactericidal power of the new lamp exceeds that of any other therapeutic mercury

apparatus. This phenomenon is shown by the relatively greater intensity of the abiotic band at 2538 A. U. as shown in the Erickson spectrogram. Dr. T. D. Beckwith, associate professor of bacteriology in the University of California, tested the bactericidal power of the general Cold-Quartz lamps a number of times, and his results were given in a letter, which was published in the *Medical Herald and Physiotherapist*, September, 1929, p. 270.

6.—One of the great drawbacks of the quartz-mercury arc has been the time lost in tilting and lighting the burner and in heating to full efficiency before each treatment. The Cold-Quartz apparatus lights at full efficiency the instant the switch is thrown.

7.—It is possible to produce Cold-Quartz radiant generators of any shape and of sufficiently small diameter to be used for nasal, aural and sinus work.

In general, it may be stated that one peculiarity of the lamp is the rapidity with which an erythema may be produced and the relatively small melanin production, as compared with that of the quartz-mercury apparatus. Therapeutically considered, this is a valuable point, because a deeply-tanned skin is almost opaque to ultraviolet radiations. Another point to be noted is its pain-relieving power.

Ultraviolet Radiation in Skin Grafting

In *Surg. Gynec. & Obst.*, Feb., 1930, Drs. W. D. Gatch and H. M. Trustler, of Indianapolis, express the opinion that the employment of Thiersch grafts, applied in the way they suggest, give a better result than do whole skin grafts.

The authors recommend ultraviolet radiation of the granulation area. They use air-cooled lamps of about voltage 70, at 10-inch distance. The time of exposure may be as much as 5 minutes where the granulations are in a bad state. Treatments are given daily and the exposure time is reduced to 1 or 2 minutes as the surface improves.

When a thin but firm bed of beefy-red non-infected granulation tissue has been built up, free from exudates, and when a thin blue line of growing epithelium can be seen at the edges of the raw area, conditions are right for grafting. A very thick graft (twice as thick as the ordinary one) is used. Excellent results are obtained by dressing the graft under pressure with dry gauze, wool and elastic bandage. The thick grafts are especially valuable for small areas which will be subjected to trauma.

Radiographic Examinations of the New Born

A radiographic study of the new-born furnishes interesting data. In *Am. J. Obst. & Gynec.*, July, 1930, Drs. C. H. Davis and G. W. Stevens record their observations in the cases of 702 new-born infants in the Columbus Hospital, Milwaukee, who were x-rayed two or more times. Forty-five (45) percent, or 319 infants, were normal from the radiographic viewpoints.* Fifty-five (55) percent of 383 infants showed some abnormality on the plate. Enlargement of the thymus was the most common finding, some degree being present in 229 infants, or 32.6 percent. An abnormal lung condition was found in 184 infants, or 26 percent, and an abnormal condition of the heart in 108, or 15 percent.

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Tonsillar Electro-Enucleation

In *Am. J. Surg.*, Feb., 1930, Dr. F. P. Herman, of West Palm Beach, Fla., claims these results from tonsillar electro-enucleation, which he considers greatly superior to electro-coagulation:

Removal of the tonsils in their entirety with one operation; the operative and postoperative results are bloodless; minimum traumatism of tissue; coagulation of lumens of vessels prevents possibilities of systemic involvement; repair is hastened; favorable psychologic impression, not only upon the patient, but also upon the relatives; saving of business days for adults.

Tonsillar coagulation means the application of a damped, bipolar high-frequency current to the tonsil, accomplished by thrusting a suitable active electrode into the tonsillar tissue. The dispersing electrode is usually a large sheet of block-tin placed conveniently on the back.

The complete technic consists of many thrusts by the active electrode into different parts of the tonsil. The current is applied by pressure on a foot-switch. The whole procedure may occupy some months before the tonsils have completely disappeared.

If the coagulating current is applied too long at one treatment there may be dangerous subsequent edema, hemorrhage and sloughing.

Electro-enucleation is performed with special instruments, of which a wire-snare tonsillotome is the active electrode and a seizing forceps the dispersing electrode, by means of which the tonsil can be completely removed from its bed in one operation, leaving a clean, dry fossa, which heals readily. The proportions of the current properties in this method are, 88 percent cutting and 12 percent coagulating.

Prophylactic Phototherapy

Writing on the prophylactic value of sunshine lamps, in *M. J. & Record*, Sept. 17, 1930, Dr. F. T. Woodbury, of New York, points out that the solar rays as they reach the earth range in wave length between 2,890 and about 200,000 Angstrōm units.

In a general way, wave lengths between 5,000 and 14,000 A.U. are converted into heat when absorbed. Wave lengths between about 6,500 and 2,890 A.U. have marked chemical action on the skin, creating substances of great value in health and growth. The wave lengths smaller than 3,130 A.U. are practically all absorbed by the epidermis. It is in this layer that ergosterol is converted, by irradiation, into vitamin D, so valuable in the utilization of calcium and phosphorus.

The naked skin has a number of vital functions: It protects from bacterial infections and poisons; it is a balancer between external and internal heat, maintaining a constant temperature of the organs; it acts as a transformer of radiant energy into chemical and thermal energy; it acts as a sense organ, perceiving heat and cold, etc.; it is an organ of secretion.

Ordinary clothing, particularly the clothes now worn by civilized men, prevents the physiologic action of the skin and puts an obstacle in the path of prophylactic solar irradiation.

The author points to the advantages of real sunshine lamps, either carbon arc, incandescent filament lamps with special globes, or others. He thinks that the use of such lamps should be extended, in schools, factories, offices and the home—wherever, in fact, there is insufficient exposure of individuals to the prophylactic phototherapy of sunlight.

Radiotherapy of Prostatic Hypertrophy

In *Le Monde Médical*, Paris, Apr. 15, 1930, Dr. T. Nogier reports a revival of the method, initiated by Robarts in 1903, of treatment of prostatic hypertrophy by roentgen rays.

Hard rays, filtered through 5 mm. of aluminum and at a spark distance of 30 cm., are employed. Usually twelve treatments are necessary, divided into 4 series of 3 daily treatments lasting about 45 minutes each, and each series separated by an interval of from 30 to 35 days.

The best results are obtained in pure glandular hypertrophy, especially if there is no cystitis. Mixed hypertrophy comes next in response and the least response is given by fibromuscular hypertrophy. The earlier the treatment is begun, the better are the results.

The rays are applied through the perineal route, the patient sitting in a chair termed a "horse," the rays coming from below upward.

In glandular hypertrophy, with the prostate soft or semi-soft, success has been obtained in 60 percent of the cases. When there is sclerosis, success can only be counted upon in 20 percent.

This method might be applied as a prophylactic treatment in suspected beginning hypertrophy of the prostate.

New Diathermy Treatment of Gonorrheal Urethritis

A new method of diathermy treatment of gonorrheal urethritis is described by Dr. J. Shohan, of Greensboro, N. C., in *Urol. & Cutan. Rev.*, August, 1930.

After the bladder is emptied, the patient is placed on his back with a large metal electrode under his buttocks. A soft, saline, electrically-conductive clay is then used to fill in the entire space between the lower electrode and the pubis. Thus an electrically conductive mass is formed, of which the urethra is part. The upper surface of the mold of clay is then covered by two thicknesses of salt-solution-moistened felt.

Upon this felt a small metal electrode is placed, and held in place by a light sand-bag.

A diathermy machine, generating four to six amperes with the patient in the circuit, is necessary to produce the desired heat. In about twenty minutes the intraurethral temperature is raised about eight degrees F. This temperature is readily maintained for another forty minutes, making the duration of the entire treatment one hour. Obviously, the temperature of the clay is somewhat higher than that within the urethra, but it need never approach the skin tolerance of the patient.

Good results are reported in a series of cases, especially marked shortening of the duration of infection.

Diathermy Combined With Sinusoidal Current

In *Physic. Therap.*, May, 1930, Dr. R. Kovacs, of New York City, describes a new apparatus known under the name of sinutherm which, in one cabinet, combines diathermy and painless, physiologically timed or rhythmically interrupted slow sinusoidal currents.

The currents from the two units are delivered through a filter system, by means of which interference of one current with the other and the possibility of shock are avoided. Current from either one or from both combined units may be applied at the one time to the patient. The apparatus is energized from the ordinary commercial alternating current.

Such an apparatus as this, with low tension wave current, has long been desired for treatment of industrial injuries and many types of myositis, synovitis and arthritis. It causes contraction of the larger muscles, usually those which are voluntarily controlled.

Excessive Menstrual Bleeding

The treatment of idiopathic excessive menstrual bleeding—that is, when there is no apparent cause such as fibroids—comes, according to Dr. F. Hernaman-Johnson, in *Practitioner*, Lond., Mar., 1930, within the province of the radiologist, by bringing about an artificial menopause. This is most applicable to women between the ages of 40 and 50 years.

A sterilizing dose of x-rays, which does not come near a dangerous skin dose, may be delivered at one sitting, but the author thinks it better to give two sittings of one hour each, on two consecutive days, with a "precautionary sitting" of an hour about a month later. The main doses should be given just after a period has ceased. There is usually one stormy menstrual period following the treatment and very exceptionally a second. The menopausal symptoms cannot be avoided, though they may be slight.

Diathermy in Cataract

In *Eye, Ear, Nose & Throat Monthly*, for May, 1930, Dr. S. J. Rubley, of Monroe, Mich., states that definite results in improved vision have been obtained by him in about 100 cases of traumatic cataract, treated by diathermy.

The headband electrode-holder, devised by Drs. Hollender and Cottle, of Chicago, is used.

The patient is seated in a grounded chair, distant from metal piping. The larger electrode is placed at the back of the neck, a soapy gauze

pad separating it from the skin. The smaller electrode is placed over the eye to be treated, the pad being moistened with tap-water only. The amount of current employed is from 300 to 500 M.A.

The improvement in vision observed is about one size of Snellen type each week.

The cases most suitable for treatment are those traumatic cataract cases where there is still a vision of 20/200. Marked hypertension, with arteriosclerosis, is an indication for very careful treatment, at least until the pressure has been brought down considerably.

In some cases mentioned, 4 to 6 diathermy treatments, of 30 minutes each, were given at intervals of about a month or so. Following about 6 treatments, they are carefully refracted and then come in after 6 months for a check-up.

Ionization in Deafness

According to Dr. H. N. Barnett, in *Practitioner*, (Lond.), Jan., 1930, all attempts to cure deafness due to otosclerosis, by operative and other measures, have failed, and the only thing that is of the slightest use to relieve the symptoms is to employ ionization, using reversed poles in order to soothe nerve endings; a certain amount of irritation is thus got rid of and the patient is relieved to some extent of the terrors of grave tinnitus.

Ionization is also employed in the treatment of deafness due to chronic infection and inflammation of the middle ear. Iodide of potassium or French tincture of iodine is used for the negative pole and sodium chloride for the positive. The application may be made in the external auditory meatus or over the mastoid.

The current must be from the main. The negative electrode (size about 3 by 2½ inches) is applied behind the ears over the mastoid area on a pad of gauze, sixteen layers thick, soaked in a 2- to 4-percent solution of potassium iodide. The positive electrode (size about 7 by 5 inches) is placed over a pad of the same thickness soaked in sodium chloride and put under the hands. The electrodes and pads should be bandaged firmly and the current started very gradually, indication of tolerance being reached when the patient feels a prickling heat behind the ears, a salty taste in the mouth or some "giddiness." From 5 to 10 milliamperes is the average strength of current, applied for about 15 minutes.

The author states that the value of ionization in treating these cases is great.

Irradiation Treatment of Toxic Goiter and Hyperthyroidism

Many reports in the literature indicate that the vast majority of cases of toxic goiter and hyperthyroidism are probably best treated by the roentgen rays.

In *Phys. Therap.*, July 1930, Dr. J. T. Stevens, of Montclair, N. J., reports that, of 270 cases, in which all the details of treatment were satisfactorily followed, 243 (90 percent) were cured; 12 others were definitely improved. The author considers that radiation therapy is the only method of radical treatment that can be safely carried out in cases showing great intoxication with a high metabolic rate or with a low metabolic rate which is rapidly rising. Cases with severe pressure symptoms, with large tumors, should be dealt with surgically.

The roentgen rays are applied at two separate sittings with one day of rest between. The first day's treatment consists of irradiation through one port of entry over the posterior surface of the neck and upper mediastinum. The factors are 4 milliamperes; 180,000 volts; ½ mm. zinc, plus 3 mm. aluminum as a filter; 50 cm. focal skin distance; port of entry 10 by 20 cm.

On the next day of treatment, both right and left lobes of the thyroid are treated from the anterior surface of the neck. From each port the rays are directed downward and inward so that, having passed through the thyroid, they irradiate the upper mediastinum from the port. The factors are 4 milliamperes; 150,000 volts; ¼ mm. zinc, plus 3 mm. aluminum as filter; 32 cm. focal distance; 300 roentgen units dose.

The average case demands, usually, seven or eight such series of treatments.

Radium is used for patients unable to leave their beds on account of severe toxicosis. The method consists in using 10-milligram tubes or needles in sufficient numbers to cover the tumor. They are applied in the form of a pack, filtered by the needle wall, plus 1 mm. of brass, at a distance of 2 cm. The distance between tubes is 1 cm. Duration is up to 16 hours, according to indications. When sufficiently improved, the patient is brought to the clinic for roentgen treatment.

BOOKS

McKenzie: Diathermy in Oto-Laryngology

DIATHERMY MEDICAL, AND SURGICAL IN OTO-LARYNGOLOGY. *By Dan McKenzie, M.D., F.R.C.S.E., Consulting Surgeon, Central London Throat and Ear Hospital; Oto-Laryngologist to the French Hospital, London. New York: Macmillan Company.* 1930. *Price* $4.00.

The work of Dr. McKenzie, of London, Eng., has been conspicuous in the application of diathermy to oto-laryngologic conditions. His book gives a concise but clear exposition of these applications.

The subject is discussed from the theoretic, clinical and technical standpoints. Chapters are devoted to medical and surgical diathermy in non-malignant and malignant conditions, but the subject of cancer receives special consideration, two of the six chapters comprising the book being devoted to it.

The work will be found of great clinical value to the specialist in oto-laryngology who is either using this special therapy or desires to become acquainted with its details; also to the physical therapist, in regard to this special use of diathermy.

THE SEMINAR

CONDUCTED BY
MAX THOREK, M.D. *(Surgery)*
GEORGE B. LAKE, M.D. *(Medicine, Ethics and Economics)*

[Note: Our readers are cordially invited to submit fully worked up problems to the *Seminar* and to take part in the discussion of any or all problems submitted.

Discussions should reach this office *not later* than the 1st of the month following the appearance of the problem.

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PROBLEM NO. 1, 1931 (ECONOMICS AND ETHICS)

Submitted by Dr. C. H. Kennedy
Fort Smith, Ark.
(SEE CLIN. MED. & SURG., JAN., 1931, P. 52)

Recapitulation: A group of surgeons established a hospital in a town of 30,000 inhabitants and organized a *Hospital Association*, for the purpose of securing patients, at a flat rate of $2 a month per family, to cover all medical services except in chronic cases. They secured 2,800 subscribers to this service.

There is a law in the state which prohibits a physician from soliciting patients. The doctors involved were expelled from the State Medical Society.

Recently the charter of the *Association* was revoked, on the grounds that, as no member of it was a physician, it was, as a corporation, unable to fill its contracts. This stopped open solicitation of subscribers, but the hospital is still running, giving a very low grade of service. The whole arrangement has caused severe economic losses to the ethical physicians and hospitals in the community.

Requirement: What to do about it?

DISCUSSION BY DR. EDWARD H. OCHSNER, CHICAGO

Two of the principal reasons for a seminar in medical economics and ethics are:

1.—To offer a solution in an unfavorable situation or, if this is impossible,

2.—To suggest a method or methods of preventing a recurrence of the same mistake.

In Chicago, no hospital can operate without a license, so the revocation of the charter, in itself, would automatically necessitate the closing of the hospital. With a state law which prohibits any physician from soliciting patronage in the state, and the charter revoked, it ought to be possible for a competent attorney to find some way of closing the institution. My suggestion would be for the State Medical Society to employ the best legal talent in the state, with the view of finding a legal way to close the institution.

In the meantime, it seems evident that the local fraternity was asleep when the project was first started. If the Association had been prevented from getting a charter, it would probably never had gotten a start, while now, when it is a going concern, stopping it may be very difficult. Another case of calling for help after the horse is stolen, in place of locking the stable door beforehand! This should be a lesson to physicians in other communities.

DISCUSSION BY DR. G. M. RUSSELL, BILLINGS, MONT.

The problem in economics and ethics presented by Dr. Kennedy depicts practically the solution for the high cost of medical service proposed by Evans Clark under the caption, "A Cure For Doctors'

Bills," in the October *Atlantic Monthly*, the difference being in the larger medical corps he proposes and the larger annual fees, which were $50 a year for the individual and $150 for a family.

There is no doubt that the public would appreciate such an arrangement, but it would not seem especially remunerative for the two surgeons involved in the instance cited in this problem, inasmuch as they are only receiving 25 percent of a yearly income of $67,200, giving them, gross, $16,300, and netting them, probably, considerably less than $6,000 each, for which they are doing at least three times as much work as they would do for a similar sum in regular practice.

One way to counteract such a condition is for the physicians and hospitals of the town to combine and offer to the public the same service as is rendered by this outfit, at the same cost. To be sure the physicians and hospitals would not live very luxuriously during the process of elimination.

Another, and possibly a more practical method of eradication, would be to secure the passage of ordinances providing for an inspection of hospitals and making it unlawful to run a hospital below a certain standard, as regards equipment, personnel and manner of caring for patients, based upon the requirements of the American College of Surgeons. If the hospital these fellows are running had to come up to the standard maintained by others, their expense would be so terrific that they would soon cease to exist. It would require more than 75 percent of such an income as they are having to take care of the hospital expense, and it is doubtful if their entire income would handle it.

Discussion by Dr. A. T. Rasmussen, La Crosse, Wis.

The case cited is clearly one in which the doctors were soliciting patronage through paid solicitors. This is shown by the fact that the doctors (or hospital) waive their first month's fee as pay for the solicitor. It is plain that they are violating the spirit and intent of the state law prohibiting solicitation, if not the letter of it. The Hospital Association was, of course, only a paper organization, set up for the purpose of evading the law, which fact was recognized by the Court in revoking its charter.

The whole thing savors of the sharp practices of a certain type of lawyer, employing legal technicalities to evade the real purposes of the law.

The fact that the hospital is even now operated on the very low plane of efficiency described is evidence enough that the whole thing is a commercial proposition of low order, in which the patient's welfare receives secondary consideration, at best.

The State Medical Society did right in expelling those connected with the nefarious business.

While the court action stopped *public* solicitation, it is a reasonably safe venture that it is still going on clandestinely, for such an "association" will not live without it. Therefore it would seem that the remedy lies in getting the evidence, instituting prosecution and proceedings to revoke the licenses of the offenders for violating the statutes prohibiting such solicitations, and then establish in the courts that they *actually* were soliciting patronage in violation of law.

Discussion by Dr. Emmet Keating, Chicago

When a contingency like the one mentioned in the problem arises, the local medical profession usually becomes excited and assails the innovation with a vigor that gives the fraudulent scheme a greater impetus. They waste their efforts, lose their tempers and make the public feel that the only reason the doctors are against an institution of that kind, is because they fear competition. If the ethical physicians will refrain from condemning the quack institution and make a careful and earnest study of all the ways in which they can render a better service, the greater part of the population that has been sold a medical gold brick will return to them. Let their medical society quietly expel any physician who will work for the institution, and *avoid newspaper controversies.*

I quote from an article I wrote for the January, 1929, issue of *Northwest Medical*:

"At the present time, studies and experiments in rendering medical service are being made by men outside of the medical profession, who are striving for a goal of cheap service or outright charity. Many of these men are giants in the world of business. They are very thoroughly aware of the fact that no business can be successful and continue to exist, unless it is conducted at a profit. They know that cheapness may be profitable when it is the result of quantity production. They know that, in many things, quantity production is not incompatible with excellent quality. But they do not know

that *quantity production in Medicine is a deadly foe to either excellent or maximum quality.*"

Discussion by Carroll Dunham Smith, New York City

I have been thinking and talking about the problem of the Association Hospital and I am not surprised when all of those to whom I have talked, reply that the problem is a difficult one and the correct solution not easy to find.

If the physicians are guilty of unethical or unfair practice, and cannot be talked out of it, by fellow physicians or others interested, it seems perfectly legitimate to drop them from the medical societies, though that may not stop their activities.

In business, as in the professions, much has been done in a cooperative way to show the error of their ways to those guilty, and either by persuasion or cooperative pressure, to induce them to discontinue.

Competition generally brings about improved service, improved quality and, sometimes, lower prices, in the effort to meet it, and it is possible that a very earnest effort on the part of the independent physicians in the communities to give their patients more painstaking, better, and more skillful service, might overcome this competition of the Association Hospital.

It would be well for the independent physicians to scan their own fees and the quality and degree of service they give their patients carefully, with the probability that the fees might be reduced without injustice to the physicians and the quality of service might be increased.

The independent physicians might offer some modern refinement of practice or of diagnosis or of service, that would counteract the activities of the Association, such as chemical tests for examination, x-ray and other adjuvant treatments, periodic health examinations, dietary service, etc.

They might form cooperative groups composed of the general practitioner and obstetrician and specialist in as many types of practice as might be desirable, based on the size of the town, the number of capable specialists available, and the need for their services.

That might enable the patient to have different kinds of service at his home, just as he would get at the hospital.

These, of course, are details that would have to be carefully worked out, the thought being, to endeavor to give the patient such good service that he would be deterred from going to the Association Hospital, even though the cost of the private physicians might be higher.

If it is desirable to maintain the hospitals that are now suffering from the Association competition, it might be possible to bring about a local drive, for the raising of funds and for the promotion of public goodwill in the hospitals and use of them.

Possibly the hospitals that are suffering need renovating and bringing up to date, so that they are in position to offer the competition of high-grade service, as against the low price made by the Association.

Discussion by Dr. M. O. Robertson, Bedford, Ind.

Personally, the way I have met problems in ethics is about as follows: One day some reliable patient may tell me a very uncomplimentary and ugly thing one of my colleagues has said about me. If I can not ignore it, I never mention it to a soul until I call in person on the colleague in question (this has happened only a very few times in my professional life) and say, "Dr. A., I have been told that you said 'so and so.' "

Dr. A. replies (somewhat confused), "Why, I—I—never said that; how could such a thing be rumored."

I say, "Well, Dr. A., I am glad to know that, certainly; and any time I hear of anything you say, be sure I'll not gossip it on the street, but come direct to you."

Dr. A. may be innocent; he may be guilty, but he always has been very pleasant with me afterwards—not because he fears I will thrash him, but no doubt he fears that he might have to thrash me.

I really believe that a visit to the head of the hospital in question from about six or eight medical men with a soft glow in their eyes, who would inform him that the staff might contemplate a few fistic encounters if certain rules were not abided by, might accomplish much good.

Discussion by Dr. J. Lewis Webb, Chicago

There are figures that indicate that a single man or woman requires an average of $16 worth of medical service a year. Another set of figures indicates that if the charges are $3.00 for a house visit, $2.00 for an office visit, $50.00 for a delivery, $150.00 for major operations and $20.00 for minor operations, the average man will, from ages 21 to 66, for himself,

wife and three children, need approximately $5,000.00 worth of service or an average of $110.00 a year.

Upon the basis of these figures, an organization selling health insurance to a group of 2,800 families (10,000 to 14,000 individuals) should collect about $300.00 annually from each family. The $67,200 that is being collected by this Association is inadequate and ultimately means collapse of the present scheme. The collecting of inadequate premiums is comparable with the fraternal insurance, so popular a few years ago, in which those who died early got their money's worth, while those who were fortunate and did not need help, paid in year after year, but finally got nothing back because the schemes had failed. Apparently the low-cost insurance salesman of by-gone years has now gone into a new racket.

The American standard of living seems to require one physician for an average of 600 population. The 10,000 to 14,000 citizens supporting this clinic have four physicians, or approximately one for each 3,500 of population. Any individual who is the 1/3,000 part of a physician's clientele is very much below the accepted safe standard. It is impossible for any physician to serve so many people. In this group there are some who are receiving technician service; others are getting pill-dispensing service; some are getting only salesmanship and psychology; while a certain few are receiving a good grade of service. Which individual can be sure he is among these last?

One of the sad things in Medicine is that salesmanship and psychology lead some people to like to stand in line, hire the doctor that does four major operations an hour and attends ten deliveries a month. A proper pose, a stock of packaged pills, and a line of waiting patients impress some people more than careful, deliberate, thoughtful service.

A city of 30,000 population, where this four-man clinic serves, say, 10,000 persons in some sort of way, presumably has the average number of physicians, or one for each six hundred population. This means approximately 50 physicians in the community. Outside of the clinic, then, there are 46 physicians and three standard hospitals, to care for 20,000 people.

A very good rule in business is, "Don't worry about what your competitor is doing; work hard to make your own business all it should be." The smallest group of physicians that can handle all branches of medicine is eight. A two- or a four-man clinic is inadequate. The city described has plenty of material to have the best of medical service. If the 46 physicians and three hospitals can not get together and develop several cooperating groups that can render superior service, something serious is the matter with the 46 physicians.

Doctor Kennedy tells of a law suit to put the Association (legally) out of business, and the open opposition of the County and State Medical Societies. All such activities indicate to the people that the other physicians do not dare compete medically with this clinic. Any jealousies and "knocking" between the 46 physicians or the three hospitals helps the clinic. Maybe the doctors and hospitals have given the clinic more advertising than all else it has done.

My suggestions are: "Educate the public, in a quiet, dignified way, that it is buying "oil stock"; stop giving the clinics thousands of dollars' worth of publicity; stop destroying the prestige and clientele of each other; develop cooperation within the profession that will give the public an excellent service; educate the public to expect real, high-grade medical service, with no glib solicitors or waiting lines for hurried consultation and treatment. A leader with a broad view, to inspire confidence and bring about professional cooperation, and at the same time direct a "public relations campaign," should be elected and heartily supported.

The experience of this city can probably be repeated in any community of 14,000 population. If the medical profession as a whole does not wake up and put practice upon a modern basis, I firmly believe that thousands of doctors will, within a few years, be busy developing clinics like the one cited. The greatest danger is that lay business men will see the possibilities of such clinics and, before we realize what is happening, physicians will be mere employees.

Solution by Dr. Kennedy

In these days everybody has an automobile and almost everybody has a radio, and most of these things are paid for on the monthly payment plan. Clothing, food, rent, light, heat, telephone and nearly everything one uses is paid for by the

month. People have the habit firmly established of paying by the month. Few use the budget system, and if they do they seldom have any sum set aside for hospital and doctor's bills, unless it is in the form of sick and accident insurance; and those able to carry policies of this kind are usually able to pay the doctor's bill. If these people can be gotten into the habit of paying medical and hospital bills by the month, why not do it that way? It looks as though we are going to *have* to do it, whether we want to or not.

We know that too many have spent too much for luxuries in the way of automobiles, radios, etc., but it is not within our province to regulate that. A move on the part of the doctors at this time might be self preservation; but if it is put off too long it will be a move in self defense.

If the medical profession were well enough organized, we might say, "We are willing to do a reasonable amount of charity work, but those able to pay must pay, or get no services."

In the first place, however, as things now stand, the medical profession would not stand solidly behind such a movement; and in the second place, it would not be a good policy, because it would create a great deal of adverse opinion and criticism by the public and the medical profession does not stand any too high now in the general esteem; while it is the public and not the medical profession that have largely to do with making our laws.

The general trend of practically all enterprise today is toward mass activity. Schools are consolidated for better and more economic instruction. Church, social, civic and other activities are becoming more unified. This reaches out into practically every line of human endeavor, and is conducive to economy and better service, the only question being whether or not the results are properly distributed, so that none will be injured by it.

Exclusive individual practice of medicine will soon be a thing of the past, if some method is not devised to stop the encroachment upon its rights by outside forces, such as politics, propagandists, philanthropists and private industry, and the doctors are foolish to deceive themselves into thinking that there will be some way to avoid mass practice. It is already being done to a considerable extent as, for instance, by railroads, industrial corporations and some fraternal orders that furnish some sort of medical and hospital care to their members or employees. We also have the work of city, county and state health officers, which is growing larger in scope each year and, in a good many instances, encroaching on the individual practice of the locality.

People pay for everything else by the month; then why not the medical and hospital bill? But *let them pay it in advance.* A plan can be devised whereby the head of the family pays monthly and, in return, receives medical, surgical and hospital care for the family, including all minors. The fee charged for monthly-pay service could be arranged on a sliding scale, so that those whose earning capacity is low would pay a lower scale, commencing at the bottom and graduated upward according to the earning capacity of the individual. Each would be accorded the privilege of calling his own family doctor or any other doctor he might choose, provided, of course, he was a member of the group organized for the purpose; and it should be possible to have every reputable physician in the community enrolled for service, so that all would participate. The method of reimbursing the doctors should be on a pro rata basis, according to services rendered during a certain period of time.

The cost of running an organization of this kind would be very small and practically all the money received as monthly dues would find its way to the doctors doing the work, without any going to any middle-man or association for administrative purposes.

The scale of monthly payments could be so graduated that those well able to afford medical services would be unable, even if they wished, to take advantage of the services, as they might do if the monthly rate of pay was on a flat basis for service; and this would also enable the poorer class to get good service at a minimal rate. Under this plan, the professional deadbeat would either pay his share into the organization, or be denied service unless he paid cash.

This plan would put sound medical service within the reach of all and, at the same time, keep the control within the medical profession. No individual or small group of individuals could compete with a community organization of this kind, and most industrial concerns would be glad to have their employees avail themselves of this form of service and protection.

CLOSING DISCUSSION BY DR. GEORGE B. LAKE, CHICAGO, ILL.

The various features of this problem have been surprisingly well covered by this spirited discussion, so that little remains save to emphasize a few points which seem to me especially important.

In India, Mahatma Gandhi has been giving the world a demonstration of the tremendous power of those hidden forces of man which we may call mind or soul. Such forces seem likely to overcome the immense physical power of the British Empire; and such forces should be used in this case.

People who are able to do so will gladly pay from $2,000 to $10,000 for a high-class automobile, for the sole reason that *it is a better car*, when they could buy a second-hand, Model T Ford for $50. If the physicians of the afflicted city will concentrate their efforts on selling, and then *actually giving* to the people a Buick or Packard or Rolls-Royce type of service, *they will find a ready market for it.* When things go wrong with us, the first and most likely place to look for the trouble is *in ourselves.*

To "sell" this idea to the people will require an intensive campaign of *impersonal, educational advertising*, sponsored by the local or State Medical Society or both, and studiously refraining from any personal mention of individual physicians or of the offending Association. In fact, everything should be done *as if the Association did not exist.*

The two keynotes of this and similar problems are, as I see it; first, the raising of the standards of practice and service of the independent physicians and hospitals; and second, educating the public to demand and pay a reasonable price for the higher type of service.

PROBLEM NO. 3 (MEDICAL)
SUBMITTED BY DR. R. A. HILLS, RUSSELL, IA.

The patient was a man 54 years old, one of a family of twelve children, all living and well, with a negative family history (both father and mother lived more than 80 years) and also personal history (he had never been sick in bed), except for the fact that he was a heavy user of alcohol.

On December 3, while in town, he had a "spell" and fell in the street, but recovered consciousness in a few minutes. On Dec. 6, while at home, he fell again, but did not lose consciousness. At this time he had a voracious appetite, his kidneys and bowels were acting normally and his blood pressure and blood and urine findings were entirely normal. The Wassermann test was negative on two occasions.

On Dec. 8 he suddenly fell on the floor and had a terrific convulsion, which was controlled only by the inhalation of chloroform. After this he lay unconscious for 6 days. A spinal puncture revealed clear fluid with a few red blood cells. Intravenous injections of isotonic salt solution and dextrose did no good.

Requirement: Suggest diagnosis and treatment.

THE PHYSICIAN IS WORTHY OF HIS HIRE

The payment of physicians for all work done for individual patients or for the public is an important feature of good hospitalization. There is no more reason for the medical profession to render free service in government hospitals than to assume the burden of expenditures for nurses, orderlies or supplies. It has often been stated that physicians' personal services do not represent cash outlays for supplies and hence are not of the same importance economically as are other medical expenditures. But such is not the case. The only real distinction is historical, in that physicians, in the past, have been able to recover the value of their "donated" services by assessment against their full-pay patients, whereas orderlies, nurses and the vendors of supplies have not been able to do so.—From "The Public's Investment in Hospitals," by C. Rufus Rorem, Chapt. XXI.

THE CLINIC

UROLOGY

Vesical Calculus

By J. L. PRITCHARD, M.S., M.D., *San Jose, Cal.*

URINARY retention and infection are the factors responsible for the formation of vesical calculi.

Stones are of two distinct types, primary and secondary; the primary occurring in an uninfected urine and the secondary when infection is present. Therefore, when following this classification, it is apparent that the primary calculus usually has its origin in the kidney. It is not difficult to believe that a collection of crystals, having their origin in the kidney, would pass to the bladder and remain there, increasing in size due to accretion of salts from the urine. Secondary calculi—those forming in infected urine—arise in the bladder, due to changes in the urine, allowing the salts to gather around bacteria or broken-down cells.

Vesical calculi are found at all ages, but most commonly in the young or in the old. This is explained as being due to the more common vesical retention in the young and in the old. Any crystalline deposit occurring in the normal adult bladder would more likely be voided. Vesical calculi are comparatively rare in the female, due to the short urethra and the absence of the *bas fond*. Martindale reports 371 cases, only 5 being in females.

COMPOSITION

Vesical calculi are usually composed of the salts found in the normal urine. While they may be formed of a single salt, in most instances more than one salt is present. Calculi formed in acid urine are composed of uric acid, sodium urate and calcium oxalate. In alkaline urine the calculi are usually composed of the phosphates of magnesium and ammonium and the carbonates. Frequently the center of the calculus may have a different composition than its periphery. The core of the stone might have formed in an acid medium and be composed of pure sodium urate; other layers being formed in an alkaline urine would be composed of the phosphates.

DIAGNOSIS

In a majority of cases, the vesical calculus is single, although multiple calculi are found.

Practically all of the large stones are single. The largest calculus on record, which he removed from a sixty-one-year-old man, was reported by Randall. That stone weighed four pounds. Its longitudinal circumference measured 48 cm., and its greatest horizontal circumference was 40 cm.

The shape of the calculus is determined by its chemical composition and environment. Most movable calculi are either round or oval. The most characteristically shaped of all stones are the "mulberry" or "jackstone" type, which are composed of calcium oxalate.

A stone may remain in the bladder for a long time. When the calculi are freely movable, the symptoms are pain, sudden interruption of the urinary stream and hematuria. Sudden interruption of the urinary stream is explained by the obstruction produced by the calculus falling against the vesical orifice.

The most ancient method used diagnostically is the socalled "sounding for a stone." It consists in the introduction of a metal instrument into the bladder. Contact with the stone would produce an audible click or a grating sensation to the examining hand. The x-rays are valuable in some cases, but many of the vesical calculi cast no shadow. *Cystoscopy is the method of choice.*

Treatment

1.—*Prophylactic measures*: While the various chemical and physical factors underlying the formation of stones are imperfectly understood, supersaturation of the urine, mechanical obstruction and infection unquestionably play important parts. The employment of measures to overcome these conditions, such as drinking more water or eliminating from the diet certain foods, should reduce the tendency to the formation of stones.

2.—*Instrumental treatment*: Small calculi may be evacuated through the vesical orifice. Young's cystoscopic rongeur is an ideal instrument; also a cystoscopic lithotrite works well in certain selected cases.

3.—*Operative treatment*: In most cases of large calculus, the suprapubic incision is the procedure of choice. In suitable sized stones, in women, it is preferable to remove them through the anterior wall of the vagina.

Case Report

Age 38; female; married; no children.

Complaint: The symptoms complained of by this patient were pain and distress in the bladder, frequency of urination, chills and fever, occuring at intervals of two or three weeks. Between the attacks she would not be greatly inconvenienced.

Past history: Fifteen years ago she had an operation, at which time there was a diagnosis of pus tubes. The tubes and ovaries were removed. Seven years ago she was examined and told she had a stone in the bladder and was urged to have an operation. Upon the advice of a neighbor she consulted another doctor, who told her that she had no stone. She believed the second doctor and refused to have an operation. Since that time the attacks have occurred at varying intervals.

Physical examination: Upon examination the following data were obtained: She was of slight build, weighing about 110 pounds; pulse rate, 80; blood pressure, systolic 155 and diastolic 85; respiratory rate 20. There was tenderness over the lower abdomen and, upon vaginal examination, a hard mass was felt in the region of the bladder.

Upon passing a sound into the bladder it was easy to make a diagnosis of stone from the clicking sensation transmitted to the hand. It was impossible to pass a rubber catheter into the bladder, because the stone was blocking the urethra.

Urinalysis showed the urine to be cloudy, slightly acid, 2-plus albumin, no sugar, no blood, no casts, 4-plus pus. The *leukocyte count* was 17,000; neutrophiles, 69 percent; large lymphocytes, 18; small lymphocytes, 13 percent. A flat *x-ray* picture of the urinary tract showed a symmetrical enlargement of the right kidney shadow. Centrally located in the lower pelvis was a large circular shadow, measuring 8x8 cm. *Conclusions: large right kidney; large vesical calculus.*

On admission to the hospital her temperature was 99.2°F.; the pulse rate, 100; and the respiratory rate, 22.

She was admitted to the hospital on May 22, 1930, and operated upon the next day. No attempt was made to do more than remove the stone from the bladder. This was done through a suprapubic incision. The stone was so large and the bladder wall was so thin and friable that removal of the stone was rather difficult. Closure of the bladder wall was not entirely satisfactory, because of the thinness and friability of the tissues.

On account of the size of the stone it was impossible to make a routine examination of the kidneys prior to operation; however, it was almost certain that there was a double pyelitis. Therefore, it was planned to remove the stone and then make a cystoscopic examination of the kidneys. Prompt removal of the stone was imperative, because uremia and sepsis were already present.

The patient reacted fairly well from the operation. The stone weighed 192 grams and measured 6.44 cm. in diameter. It was almost round and of a grayish-white color. The entire circumference was smooth.

The postoperative course was not remarkable, except that her mental condition remained clouded. She was stuporous and slept most of the time. Very little

(Continued on page 212)

CLINICAL NOTES AND PRACTICAL SUGGESTIONS

Ringworm Prevention with Salol and Chloral Hydrate

THE late Dr. Frederic S. Mason advised me when I first went into the tropics in 1918 to use a dusting powder with salol between the toes and in the groin, in order to avoid the "dhobie itch" or ringworm of the toes and groin.

Tinea in these locations has become pandemic, and many drugs have been advised for its control, as a public health as well as an individual measure. Because of the beneficial effect of salol, I have included it in the rational drug treatment of the condition and have advocated it as a preventive.

Recently, a simple experiment was performed, with the assistance of Dr. S. E. Light, intern in the dermatologic laboratory of the New York Skin and Cancer Hospital. A growing culture of *Epidermophyton inguinale*, isolated from a clinical case of ringworm of the toes, was used. Salol was taken from the drug room, as supplied in the conventional cardboard boxes. Two series of agar tubes were planted; one of peptone agar, and the other of peptone and dextrose, the formulas for the mediums being:

Peptone Agar

Agar	30
Peptone (French Chaussung)	60
Tap water	2,000

Peptone-dextrose Agar

Agar	30
Dextrose (anhydrous, granular)	80
Peptone (French Chaussung)	20
Tap water	2,000

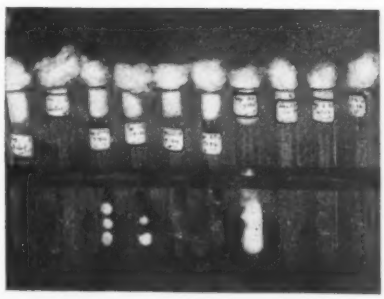

Fig. 1.—The first two tubes show no growth from salol on peptone or dextrose agar; the third tube shows growth of culture as control; the fourth tube shows growth of mixture of viable culture and one part of salol; tubes five and six show no growth of culture-salol mixtures; tube seven shows growth of cuture on dextrose agar; tubes eight, nine and ten show no growth on culture-salol mixtures on dextrose sugar.

Figure 1 was photographed 7 days after the culture transplants were made and kept at room temperature. A platinum loop was used to measure the salol and culture for the transplants. Table I tabulates the result.

TABLE I

	Peptone Agar	*Dextrose Agar*
Salol (control)	No growth	No growth
Culture "	Growth	Growth
1 salol-1 culture	Growth	No growth
2 salol-1 culture	No growth	No growth
3 salol-1 culture	No growth	No growth

The results of this experiment in the laboratory confirmed my clinical experience in the tropics and in New York City.

A second set of tubes, prepared as was the first, was photographed four days after transplanting. The same viable culture and the same salol were used, but the salol had been heated in an attempt to dissolve it

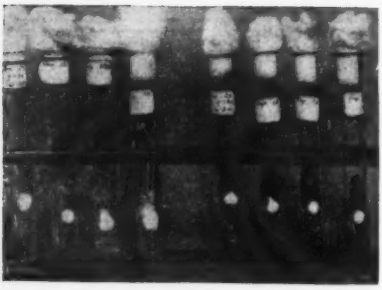

Fig. 2.—The salol was inadvertantly heated in solution before the viable culture was added, so that we have a control experiment. Culture plus boiled (hence inert) salol evidences growth in all tubes.

in water. *The heating rendered the salol worthless as a fungicide.*

A second series of experiments was performed, with the assistance of Dr. D. E. Kelly. This time, chloral hydrate was the drug utilized. It inhibited the growth of the same viable fungus.

A liquefied mixture of salol and chloral hydrate was found effective, even if reduced to two percent of each with sterilized, inert powder.

A third series of experiments was done with the assistance of Dr. B. Litterer. Many inert powders, suitable as vehicles for the salol and choral hydrate, were cultured at room temperature on both of Sabourand's mediums, and at incubator temperature on broth-agar. Fuller's earth, starch and talcum gave growths of unidentified yeasts and fungi at room temperature. The starch powder also grew a staphylococcus. This series indicates that the inert powder vehicle should be sterilized, as an extra precautionary measure against adding new organisms to the skin.

The condition of the epidermis of the interdigital spaces must be considered. It may well be that the hydrogen ion concentration of the fluid oozing from the broken epidermis influences the susceptibility of the injured skin to tinea invasion. The feet and the spaces between the toes should be washed with soap and water every day and then dried thoroughly.

The following combination is suggested for the prevention of tinea of the feet:

℞

Salol	2
Chloral hydrate	2
Sterilized Terra silicea purificata	100

The powder should be distributed in the locker rooms of swimming pools, golf clubs, gymnasiums, etc. It should be dusted between the toes after the feet have been exposed at the beach, swimming pool or any place where many people walk with uncovered feet. There is no reason why it should not be a regular part of the daily toilet in the home.

HERMAN GOODMAN, M.D.
New York City.

Influenza

Diagnosis and Treatment

SOCALLED la grippe, we always have with us. Whether this is true influenza, in a mild endemic form, we do not know. It, however, resembles true epidemic influenza in many ways, but is particularly mild, rarely producing death and usually only incapacitating the patient for three or four days.

Epidemic influenza is a distinct disease; it is an acute infection, cause unknown. The prodromal symptoms are usually mild and the onset sudden, with or without a chill, immediately followed by a high fever (102° to 105°F.), which lasts for two or three days and then may fall abruptly, or decline gradually in two to seven days. The patient is extremely prostrated—an evidence of severe toxemia. This prostration is much greater than the symptoms warrant. Headache, injected eyes, catarrhal symptoms of the upper respiratory passages, backache and general muscular pains are practically always present.

In the respiratory form, cyanosis and a violent cough, of a dry, harassing nature are present; the pulse is slow and the blood shows a leukopenia.

In the socalled abdominal form, diarrhea and vomiting are the rule, although constipation is usually an initial symptom and tympanites is frequent.

In all cases acidosis is present, frequently insomnia, and there is always a marked circulatory depression.

In typical cases, as above stated, the temperature drops suddenly about the second or third day; then follows usually a subnormal temperature, accompanied by extreme prostration, and it is particularly during this stage that complications, frequently fatal, result. These complications are due to secondary infections, and probably ninety-five percent of the deaths occurring are due to these complications,

which may be local infections of the upper respiratory tract, otitis media, sinus infections, bronchitis, tonsillitis, pleurisy and frequently pneumonia, endocarditis, empyema and renal or genitourinary infections. Meningitis and encephalitis are often seen. In addition, many cases succumb to other infectious diseases, such as erysipelas, measles, scarlet fever, even mumps, during this stage of prostration.

If, after the temperature has been subnormal for one or two days, there is a gradual rise above normal, beginning usually on the third day, pulmonary or other complications are to be expected. It is, therefore, essential that the patient be carefully watched during the convalescent stage, which is usually prolonged.

Treatment

The bacterial vaccines (bacterins), especially those containing the four types of pneumococci, *Streptococcus viridans, Staphylococcus aureus* and *B. influenzae,* are valuable in preventing a severe attack of the disease and in minimizing complications.

The nose and mouth should be kept as clean and germ-free as possible by spraying and gargling, from time to time, with some harmless antiseptic, such as Metaphen-2500 or aromatic chlorazene solution.

Calcidin, in large doses (5 grains every three hours), if its use is begun early, is usually efficient in mitigating the attack and in lessening the incidence of secondary pneumonia.

For the fever, aconitine hydrobromide, in *just sufficient dosage* to soften and slow the hard, full pulse, is excellent. Sponging with a good rubbing alcohol, such as Alcolo, is often helpful.

To relieve the pain, which is almost always present, amidopyrine, preferably in small doses, is the safest analgesic now available. It should be stopped when the fever falls. Aspirin (acetylsalicylic acid) is *contraindicated,* because it depresses the circulation. Cinchopyrine is better. Sodium salicylate and sodium iodide (or, better, Salihexin) may be given, intravenously, with good results.

The bowels should be freely opened with a saline laxative. If tympanites is present, the use of ephedrine in any form should be avoided. The condition may be relieved by the judicious use of pituitrin or strychnine.

Vomiting, if present, is best controlled by Nembutal, which is also of value in combatting insomnia and the dry, harassing, unproductive cough.

The acidosis, which is almost always present, should be corrected by the administration of alkalies, such as sodium citrate or Sodoxylin.

If renal complications develop, acriflavine may be given, by mouth, or Salihexin, intravenously. The free use of water is always advisable.

All utensils and linens which come in contact with the patient should be carefully disinfected.

J. F. Biehn, M.D.

Chicago, Ill.

The Physician and the Surgeon
(A Letter)

X.Y.Z., F.A.C.S., M.D.,
Blankville, Iowa.

My Dear Doctor Z:

You will note that I am placing your insignia as a surgeon ahead of your Doctor of Medicine. I do that because I note a disposition on your part to place the greatest significance on this. The only reason that you do this is that it has proven itself to be most remunerative and spectacular. It is a sort of a plaudit to the people.

Here, in a small amphitheater, lies a man, woman or child. He is to have a chance for his life at the hands of a noted surgeon and his assistants. All stand ready for the word of the chief, all bedecked in white with only two eyes showing. His hands are carefully gloved and are held apart so they will touch nothing unclean. All is silent, except for the labored breathing of the prostrate form on the table. The surgeon chooses a knife and, with a deft hand, makes a clean cut through the skin of the abdomen. Then they bend closer and are intent for an hour or more tying, cutting and nipping, and finally the skin is sutured and, for all that anyone can guess, the patient has been saved. There is no more spectacular scene! One could hardly have made this important figure out of anything but an M.D. so, of the two, the surgeon should remember that he is first and always an M.D., and not only that, but it takes 25 years to make that surgeon, as the surgeon well knows!

It is not strange that a man with enough courage to try anything—a positive radical, with plenty of self-respect and courage—

should come to a place where he would resist any effort to be deprived of any of his just fee, and so bring in the question of fee splitting. It used to be the custom that the doctor who referred the case, as a matter of courtesy was permitted to be a third assistant. He felt that if he could only get blood on his fingers and handle the instruments, he would be at least a part of the silent tragedy and, if the patient recovered, he would have some of the credit; and if the patient died, he could blame the surgeon.

Personally, I see nothing in fee splitting except an effort to create a special class, the surgeon; and possibly this has some justification in the elevation of the standard, but there is hardly more justification to make a surgeon a separate entity than to make one of the Doctor of Medicine. The surgeon probably infringes upon the rights of the M.D. more than the M.D. interferes with the rights of the surgeon. No man may justly claim the individual right to operate and collect all of the fee, and there are few surgeons whose clientele is sufficient that they can entirely ignore the right of the attending physician and claim absolute jurisdiction over a patient they have never seen or heard of and who would, except for the attending physician, never would have seen or heard of the surgeon.

The average surgeon has developed largely out of the cases referred to him, or more often brought to him, convinced by the physician and ready for an operation, and certainly the family physician who finds himself over-shadowed by the more conspicuous figure, the surgeon, in order to maintain his position and self-respect, is going to make some resistance, with a result that he concludes that the world is broad and that long roads have many turns. I am afraid that any surgeon who stands four-square on the principle of fee cutting will do mostly the surgery which develops in his own practice, and not the surgery developing in the family physician's. Until surgery is exclusive; that is, until it throws aside general therapeutics, obstetrics, neurology, insanity, etc., there is small danger or likelihood of having all surgical cases referred, as the surgeon desires, the family physician remaining out of the case entirely.

When everything is said and done in compliance with the Hippocratic oath and medical ethics, there is a rule that overshadows all and which will apply with complete justice and fairness to all our relations and that is the Golden Rule,—"Do unto others as you would have others do unto you."

C. P. TILLMONT, M.D.
Centerville, Ia.

Law on Commitment of Insane*

IN VIEW of the fact that a number of suits have recently been filed against physicians for damages for false arrest in connection with the restraint of persons alleged to be insane, I thought it might be of interest and benefit if I should write a general statement of the law governing the liability of physicians in such cases, and some practical suggestions for the avoidance of trouble and embarrassment.

Paragraph 2 of Chapter 85 of Cahill's Illinois Revised Statutes 1929, provides:

"Except as hereinafter provided, from and after the passage of this Act, no insane person, or person supposed to be insane, but who shall not have been legally adjudged to be insane, shall, by reason of his insanity or supposed insanity, be restrained of his liberty: Provided that this section shall not be construed to forbid the temporary detention of an alleged lunatic for a reasonable time, not exceeding ten days, pending a judicial investigation of his mental condition."

Paragraph 3 of the same statute provides:

"When any person shall be or is supposed to be insane, any reputable citizen of the County in which such patient resides or is found may file with the Clerk of the County Court of said County a statement in writing, under oath, setting forth that the person named is insane and unsafe to be at large, or suffering under mental derangement, and that the welfare of himself, or others, requires his restraint or commitment to some hospital or asylum for the insane; the said statement must be accompanied by the names of the witnesses (one of whom at least must be a physician having personal knowledge of the case), by whom the truth of the allegations therein contained may be substantiated and proved: Provided that when it shall appear by such statement that the person alleged to be insane has not been examined by a physician, the Judge may appoint a qualified physician of the County to make such examination and allow him compensation therefor, not exceeding five dollars, which shall be taxed and collected, as here provided in respect to other costs in proceedings in inquest or lunacy."

In a comparatively recent case decided by the Supreme Court of Illinois, Crawford v. Brown, reported in Volume 321 of the

*Reprinted from *Illinois M. J.*, Aug., 1930.

Illinois Supreme Court Reports at page 313, it is said concerning this statute:

"Our statute does not authorize members of the family, doctors and nurses to commit a person to an institution for the insane without the authority of a judgment of court. Temporary detention or restraint of an alleged lunatic is permitted for not exceeding ten days, pending a judicial investigation, when the safety of the patient or others require it.

* * *

"The weight of authority appears to be that an insane person may, without any adjudication, be lawfully restrained of his liberty when to not do so would endanger his own life or the life of others, but such right to restrain is limited to cases of actual insanity and immediate danger. Insanity which does not render the insane person dangerous to himself or others is not a lawful excuse for restraint without a judicial proceeding. A private person who applies such restraint must act upon facts—not suspicion or belief—and takes the responsibility of an error of judgment. Some cases hold that relatives of one who is insane may commit him without judicial proceedings, if they act in good faith for the insane person's benefit, but it seems evident in such cases the statute was different from ours, under which only a court can adjudge one insane.

Under our statute no insane person shall be restrained of his liberty unless he has been legally adjudged insane, except that temporary detention of an alleged lunatic may be permitted for a responsible time, not exceeding ten days, pending a judicial investigation of his mental condition. By practically all authorities it is held that such imprisonment or detention without an adjudication is only authorized where the condition of the person is such that restraint is necessary for the protection of the insane person or others from his violence."

This decision is in harmony with the judicial authorities of other States.

The prudent physician, faced with a situation suggesting the restraint of a person alleged to be of unsound mind, will make careful inquiry to determine:

1.—If the person has been adjudicated (that is, found by the judgment of a proper court) insane. (Note: In such case, the physician can act, according to his best judgement, at the direction of the conservator or custodian appointed under order of court).

2.—If the person has not been so adjudicated, whether he is suffering under such mental derangement that he is so dangerous to himself or others that his restraint is required. (Note: In determining this question, the physician can not rely on hearsay, not even on the statement of relatives, but must ascertain the *facts* for himself).

If the physician makes a preliminary statement giving it as his opinion that such person is of unsound mind, and the alleged lunatic is taken into temporary custody, the physician should ascertain the disposition of the case (within ten days thereafter) before giving further directions as to restraint or compulsory treatment. If the alleged lunatic has been adjudicated, the physician should act only at the direction of the duly appointed conservator or the custodian or upon a court order.

Wherever possible, the physician should protect himself against the assertion of a claim of malicious interference by securing a signed statement from the nearest relative of the alleged lunatic, requesting the physician's examination and advice.

FRANCIS X. BUSCH. Attorney
Chicago.

Send Your Name for the First Issue of JOURNAL OF VITAMINS.

Influenza

PERHAPS no observation during the great influenza epidemic of 1918-1919 was more common than the familiar comment that "the flu hit the rich and the poor alike." Apparently there was ample ground for a belief in the impartiality of the disease. Its widespread prevalence throughout the country, the frequency with which households in every social class were attacked, and the fact that prominent persons in every community were struck down, were among the outstanding, undeniable experiences in the epidemic. A certain consolation seemed to be afforded by the thought that the pestilence was democratic, even in so dreadful a sense, in its behavior.

More detailed studies conducted by the United States Public Health Service indicate that, like many conclusions based on general impressions, this observation was true only in part. Epidemic influenza undoubtedly was very prevalent among all classes of persons, and its mortality toll was levied from the wealthy as well as from the poor. But when the generalization was subjected to the closer analysis afforded by actual records of influenza incidence in 1918 in enumerated populations, the interesting indication appeared that there were marked and consistent differences in its incidence—with respect both to morbidity and to mortality—among persons of different economic status. An association was manifested. Apparently the lower the economic level the higher was the attack

rate. This relationship was found to persist even after allowance had been made for the influence of the factors of color, sex, age and certain other conditions.

U. S. PUBLIC HEALTH SERVICE.
Washington, D. C.

Send Your Name for the First Issue of JOURNAL OF VITAMINS.

Clinical Experiments on Sleep

OUR experiments on normal sleep are being extended to determine the relative merits of various commonly accepted drugless soporifics. We wish to determine, in non-pathologic instances of moderately poor sleep, the value, if any, of the following in inducing sleep and in promoting restful sleep: physical exercise before retiring; a warm drink before retiring; and a neutral bath before retiring.

I should like to have your readers who have ambulatory patients, in whom moderately poor sleep is the outstanding complaint, write me, since the plan of the research will make it possible to cooperate readily.

Data booklets for the patient to keep a record of his sleep will be provided. The booklets are labeled simply "Confidential Sleep Record" and no mention is made on them of this laboratory. A white booklet is used for the normal or control three days, a buff booklet for the three days when a brisk ten-minute walk is taken before retiring, and two other colors for the two other phases of the experiment.

All cooperation will, of course, be acknowledged when the findings are reported to a technical journal. Not more than five minutes should be taken by the patient to fill in a description of his sleep each day.

I shall be glad to receive requests from any of your readers for a set of the data booklets for their personal inspection, so that they may decide whether or not it will be feasible for some of their ambulatory patients to contribute data.

DONALD A. LAIRD,
PhD., Sci.D., Director.
Hamilton, N. Y.
Psychological Laboratory,
Colgate University.

(Continued from page 206)

urine was passed. She would take liquids freely and food fairly well, when fed by the nurse. The temperature ranged as high as 102.8°F. on the third day, and after that it ranged between 98° and 100°F. The incision showed no inclination to heal.

On June 3, ten days after the operation, the patient died. At *autopsy* both kidneys were found to be soft in consistency and grayish in color. The medullary portion of the right kidney was markedly dilated and thickened. The pelvis and ureter contained grayish-yellow pus. The ureter was greatly dilated and thickened throughout its entire length.

The left kidney was more diseased than the right. It was soft in consistency, and the pelvis was dilated. The left ureter was markedly thickened and both the pelvis and the ureter contained grayish-yellow pus. Very little functioning kidney tissue remained in either kidney. Otherwise, there was nothing found of interest.

SUMMARY

1.—Vesical calculi are not uncommon.

2.—Small calculi are usually voided, especially in the adult.

3.—Symptoms of pain, frequency and spasmodic interference with the urinary stream, indicate that a thorough examination should be made for stone.

4.—The prognosis is good in early cases, but always guarded when pyelitis and pyonephrosis have developed, therefore, every effort should be made to establish the diagnosis and institute adequate treatment with the absolute minimum of delay.

1006 Medico-Dental Building.

REALITY

The Reality behind the world of appearance is felt to be always close at hand, ready to shine in its glory, even through the apparent folly and wickedness of Man. The poet, the artist and the lover are seekers after that glory.

—BERTRAND RUSSELL.

THE LEISURE HOUR

Heaven*

By Edmund Vance Cooke

Now, Heaven was once an upper flat
(With "Credo" on the front door mat),
Wherein the saints serenely sat,
Each with a halo for a hat.

Each sang his bliss without alloy.
Each sang his most ecstatic joy,
Knowing the engine room was jammed
With legions of the suffering damned.

Such Heaven was. What Heaven is now
Heaven only knows, but anyhow
We may not criticise, because
Earth still is run as Heaven was.

Some live like Heaven and idly shirk;
Some live like Hell and do the work.
Is that profanity? Good sooth,
I wish it were! It's worse; it's truth!

Will Heaven offer solace, then,
For all these miseries of men?
Not so; Heaven's made as you and I
Improve this world we occupy.

Heaven's an effect, and not a cause,
And subject to the eternal laws.
The higher's builded on the lower
Was, is, and shall be evermore.

The primary pupil's simple knowledge
Is the foundation of the college;
So, to make Heaven of higher worth,
Come on, let's make a better earth!

To a Jewish ex-Service man an acquaintance remarked:

"So you were in the army, Ikey?"

"Oh, I vas in the army," was the proud response.

"Did you get a commission?"

"No; only my vages!"—*Tid Bits.*

*Originally published in *American Magazine.*

The Power of Advertising

The professor had just finished an evening talking on Sir Walter Scott and his works, when a lady said: "Oh, professor, I have so enjoyed your talk. Scott is a great favorite of mine."

"Indeed," said the professor, "which one of his books do you like best?"

"Oh," said the lady, "I haven't read any of his books, but I am fond of his Emulsion; I've used a lot of that."—*Pharmacal Advance.*

Zoology for the People

British Farmer (in Museum): "Come 'ere Mariar and look at this heagel."

Maria: "That haint no heagel; its a howl."

Attendant: "Beg parding, mum, that 'eres an 'awk."

W.A.B.

D.D. or M.D.?

The temporary member of a golf club wished to fix up a game. The secretary introduced him to one, Doctor Clark.

"Now, Doctor," said the stranger with a twinkle of the eye, "it is important for me to know whether you are a doctor who preaches or one who practices."

—*American Stories.*

My Paw

Maw was sayin' how we otta always be inclined
To keep an open mind
And not to be dogmatic
Or opinion-ated. And Paw sez there's no doubt of it,
But when some of these bozos with bugs in their attic
Gits to spoutin' their stuff,
To keep the mind open is all right enough
But we needn't make a fly trap out of it.

—B. H.

A "Slip That Passed in the Night"*

In the issue of the Columbus (*Ohio*) Sunday Dispatch *for June* 4, 1922, *appeared an interesting example of what happens when the make-up man nods. The features of the central figure in the group are so familiar that the discrepancy in the legend is very obvious. Picture, headline and legend are reproduced exactly as they appeared.*

FIVE GENERATIONS ARE IN NONOGENARIAN'S FAMILY

From 6 months to 98 years are the ages of the five generations represented by members of the family of Mrs. Susan Kennedy, 18 East Eighth avenue, who is to celebrate her 98th birthday in September. With her at the birthday celebration will be all her children who are pictured in the above photograph. On the right rear of Mrs. Kennedy is her son, A. G. Kennedy, 13 East Eighth avenue. Seated in front of him is his daughter, Mrs. J. W. Ricketts, of Laurelville, Ohio. On the left of Mrs. Ricketts is her daughter, Mrs. W. C. Deaver, of Detroit, mother of twin boys, who are just six months old. Despite the fact that she is nearing the century mark, Mrs. Kennedy is still active in family affairs.

*Acknowledgements to the *Literary Digest* for the title.

Thumbnail Therapeutics

New Indications For Protein Therapy

In some cases of leukoplakia, kraurosis vulvae, roentgen dermatitis or ulcer, intractable to other therapeutic measures, good results were obtained from injections of non-specific proteins.—Dr. B. Balassa, of Budapest, in *Urol. & Cutan. Rev.*, July, 1930.

Intraperitoneal Injections of Neoarsphenamine in Congenital Syphilis

As stated in *Am. Med.*, Sept. 1930, Dr. O. Barbour, of Peoria, Ill., gave 214 intraperitoneal injections of neoarsphenamine in 21 case of congenital syphilis. Good results were obtained in each case. Fifty (50) mg. of neoarsphenamine in 5 cc. of sterile water was the dose used. There were no untoward reactions. The plan followed was to give four injections at 3 or 4-day intervals, followed by four injections at 7-day intervals.

Epinephrin in Hyperthyroidism

In a case of exophthalmic goiter, the exophthalmos was reduced and the nervousness relieved by giving, under the tongue (not to be swallowed), 6-drop doses of adrenalin (epinephrin) chloride solution, 4 times a day for 28 days. Later the patient made a complete recovery. The drug acts by contracting the dilated bloodvessels in the thyroid and post-orbital regions. The dosage should be adapted to each individual patient, in proportion to weight and results obtained.—Dr. I. L. Van Zandt, in *Texas S.M.J.*, May, 1929.

Value of Copper in Anemia

From experience in a small series of cases, it would seem that, in selected instances, particularly those in which there is a nutritional factor, copper will prove to be a valuable adjunct in the treatment of anemia. No detrimental results have been demonstrated.—Dr. H. V. Dwyer, of Detroit, in *J. Michigan St. M. A.*, June, 1930.

Vaccine in Whooping Cough

During an 8-year period, during which no vaccine treatment was carried out, in the City of Milwaukee the mortality from whooping cough was 2.8 percent. During a similar period in which vaccine was used, the mortality was only 0.8 percent. The mixed vaccine used contained 5,000,000,000 organisms per cc., of which 4,000,000,000 were *B. pertussis*. One cc. was given subcutaneously, on alternate days, for four doses.—Dr. R. P. Schowalter, Milwaukee, in *Am. J. Dis. Child.*, March, 1930.

The Body Calcium

The addition of lactose to the diet increases the absorption of calcium.

Parathormone, administered during a deficient calcium intake, causes increased excretion of calcium salts from the bones. It also causes a parallel but more rapid excretion of phosphorus.—Dr. Donald Hunter, in *Lancet*, Lond., April 26, 1930.

Chronic Constipation

The best way to relieve chronic constipation is by enemas of physiologic salt solution.—Dr. Walter C. Alvarez, Rochester, Minn.

Isografts

Experiments recently made by Dr. J. Staige Davis, while not conclusive, and not to be regarded as final, have shown that individuals whose blood types are identical have the same tissue type, and tissue may be transplanted the same as blood in such individuals. In some fifty-eight experiments he has been successful in over two-thirds in making isografts; partial success has been

obtained in another large group, and real failures resulted in only a very few. This is a tremendously important discovery. If it is possible to type skin as it is possible to type blood, it is a wonderful step in plastic surgery, because so many cases are encountered where there is insufficient skin in the proper locality to supply the needs of that individual's case.—DR. F. B. MOOREHEAD, Chicago, in *Bull. Chicago Med. Soc.*, Dec. 11, 1929.

Quinine in Epidemic Hiccup

In a small number of patients with epidemic hiccup, quinine seemed to act as a specific. An intramuscular injection of 7½ grains (0.5 Gm.) of quinine and urea hydrochloride in the buttock was usually given and a second injection was given, if necessary, about 16 hours later.—DR. JOS. F. GRIGGS, Tacoma, in *Northwest Med.*, Dec., 1929.

Fruits and Body Alkalinity

Most fruits and fruit juices increase the alkalinity of the body fluids and urine. This is not true, however, of prunes, plums, cranberries and grape juice,* though, for some unknown reason, raisins do decrease the acidity of the urine.—Current Comment, *J. A. M. A.*, Apr. 5, 1930.

Lame Back

Postural defects are best relieved by support and developmental exercises. If a functional curve is present, it may be corrected by wearing a lift in the heel of the shoe. This simple device has relieved many low backaches and so-called sacroiliac strains. —DR. FRANK R. OBER, Boston, in *Am. J. Surg.*, Apr., 1929.

Feminine Hygiene

The common vaginal douche nozzle is objectionable, in that all parts of it cannot be boiled and it does not reach the necessary places. No dilatation of the walls of the vagina is produced and the fluid does not reach the more hidden areas of decomposition.

Most women erroneously use strong irrigating solutions.

Feminine hygiene is best taken care of by a douche tube capable of producing dilatation of the vaginal walls and the use of non-irritating antiseptics.—DR. W. S. PUGH, New York City, in *Med. Times*, Aug., 1929.

*Probably gooseberies and rhubarb should also be included in this list.—ED.

Exercise in Tuberculosis

Since pneumothorax must be continued for *three years*, in order to produce lasting results, how foolish it is to put a bed patient on exercise after his temperature has been normal for *three weeks!*—DR. E. S. MARIETTE, Glen Lake Sanatorium, Minn.

Ringworm of the Scalp

Very favorable results have been obtained in a series of cases from the following treatment:

Clipping the hair round separate lesions or of entire scalp, if ringworm is generalized; constant wearing and frequent changing of a washable cap; a soapsuds shampoo, biweekly; the application three times daily of a solution of gutta-percha, B.P.C., containing one-half of 1 percent thymol and 1 percent oil of cinnamon. The number of applications may be reduced if too irritating.—Dr. L. B. KINGERY, in *Arch. Dermat. & Syph.*, Dec., 1929.

The Impatient Obstetrician

Statistics prove that we in America are having a far greater maternal mortality than many a country on the Continent. A goodly number of these fatalities could be prevented were we to institute a more rigid and scientific management of our maternity cases. An overwhelming proportion of our maternity morbidity and mortality is due to the overzealous activities of our medical colleagues. True, the ignorant midwife will sometimes bring about the death of a newborn infant, or even the death of the mother, by procrastination; yet the greatest number of casualties is caused by our impatient medical men.—Dr. H. P. EPSTEIN, New York, in *M. J. & Record*, Feb. 5, 1930.

Therapy of Cancer

There exists, in the animal and the human body, a well defined system of specially endowed cells, in which reside practically all the defensive forces of the body, this system being called the reticulo-endothelial system.

It has been found that the functional capacity of the defensive cells of the reticulo-endothelial system is raised by their receiving certain proteins or metallic compounds. This fact may explain how the administration of proteins, such as the metabolic products of bacteria, or the injection of some metals, such as gold or lead have, in rare instances, been instrumental in producing favorable results.—Dr. G. KOLISCHER, of Chicago, in *J. A. M. A.*, Mar. 1, 1930.

Treatment of Uterine Fibromyomas

Many uncomplicated fibromyomas are still removed surgically, which could perfectly well be treated by roentgen irradiation. The advantages of the x-rays are the lack of risk, the simplicity of the treatment, the certainty of the results and the low cost to the patient. Treatment with radium is more complicated and, since it is a minor surgical operation, requires hospitalization, while the overhead for capital charges and insurance necessitates a higher cost to the patient.

In young patients, myomectomy is preferable, as permitting future pregnancies; and surgery is indicated in those persons with ovarian disease and inflammatory complications.—Dr. F. C. WOOD, New York, in *J. A. M. A.*, Mar. 1, 1930.

Nasal Submucous Resection

Submucous resection has been so condemned that it has almost come to the point where many are of opinion that it should never be performed. Unless there is a definite indication such as a marked deformity, or a spur which blocks nasal breathing or obstructs drainage from the sinuses, resection should not be attempted. Turbinates should never be removed unless they have undergone a cystic or polypoid degeneration.—DR. J. A. HAIMAN, New York City, in *Eye, Ear, Nose and Throat Monthly*, Feb., 1930.

Liver Extract in Tropical Anemia

A remarkable result was obtained in 4 cases of tropical anemia treated by liver extract. Red blood corpuscles and hemoglobin increased and the general state and appetite improved.

Permanent improvement may be obtained in young individuals; but in older subjects, with completely exhausted livers, the liver extract treatment will have to be continued indefinitely.—DRS. A. D. ALBERTINI and J. R. PÉREZ, in *Vida Nueva*, Sept. 15, 1928.

Absorption of Dextrose from the Colon

Experimental work has demonstrated that the absorption of rectally administered glucose (dextrose) probably depends on the passage of the enema into the ileum through an incompetent ileocecal valve. This very likely is the basis of success in the treatment of hyperemesis gravidarum by rectal dextrose administration.

The normally competent valve becomes insufficient on irritation or on sufficient pressure from below; but only a small amount of dextrose can be forced into the blood stream in this way.

A 5-percent dextrose enema is of little or no nutritional value.— DRS. R. W. MCNEALLY and J. D. WILLEMS, of Chicago, in *Surg. Gynec. & Obstet.*, Dec., 1929.

Digitalis in Pneumonia

From clinical studies it has been found that there is no evidence that routine digitalis therapy in lobar pneumonia results in a lowered mortality. Such routine use is believed to be dangerous.—DRS. J. W. WYCKOFF, E. F. DUBOIS and I. O. WOODRUFF, of Bellevue Hospital, New York, in *J.A.M.A.*, October 25, 1930.

Thyroid Extract in Nephrosis

Dietetic therapy is not sufficient to control the edema and albuminuria in cases of nephrosis. Thyroid extract is an effective therapeutic agent in true nephrosis, as proved in 3 cases. The dosage of the extract was about 10 grains (0.65 Gm.) daily, at the beginning, reduced to 6 grains (0.4 Gm.) daily after some time, when the prominent symptoms and edema had disappeared.—DR. S. J. MCCLENDON, of San Diego, in *J.A.M.A.*, Apr. 19, 1930

The Pellagra Preventive Action of Canned Salmon

Canned salmon (Alaska chum) contains the pellagra preventive factor. By reason of its potency in preventing pellagra and its availability in the preserved state, sal-

mon may be considered a fair substitute for meat in the area of pellagra endemicity, where meat is not readily available. The demonstration of the pellagra preventive value of canned salmon furnishes further evidence of the soundness of the working hypothesis that black-tongue in dogs is the analogue for pellagra in man.

U. S. PUBLIC HEALTH SERVICE
Washington, D. C.

Dextrose in Regulation of Body Weight

A regimen, consisting of a reduction in the usual intake of carbohydrate at meal time and the administration of dextrose (20 to 30 Gm. daily), in divided doses, between meals, is suggested for the treatment of overnutrition and was successful in a series of cases. No obese patient is permitted to lose more than 4 pounds weekly. No untoward symptoms, other than transient headache, constipation and a feeling of fulness in the stomach, were noted unless the dosage of dextrose is excessive. —Drs. C. W. NISSLER and B. GORDON, in *Pennsylvania M. J.*, Dec., 1929.

Raw Apple Diet in Intestinal Disease

Excellent clinical results follow the treatment of acute dyspepsia and dysentery in infants with a 2-day exclusive diet of grated ripe apples, followed by a 2-day diet without milk or vegetables. The grated apples form a puree, of which from 100 to 300 Gm. are given at each meal no other food being allowed. Formed stools are generally passed on the first or second apple day and the clinical symptoms of betterment appear.—Dr. E. MORO, in *Klin. Wchnschr.*, Dec. 24, 1929.

Chaulmoogra Oil Treatment of Laryngeal Tuberculosis

In 28 cases of laryngeal ulceration with pulmonary tuberculosis, treatment with chaulmoogra oil gave excellent results in relieving dysphagia and pain. These were sanitarium cases. The standard preparation of oil was used, to which 0.5 percent iodine was added to reduce irritation. It was applied through a syringe with a long, curved nozzle, a few drops of oil being dropped directly upon the ulcers.—DR. G. M. VAN POOLE, Honolulu, in *Laryngoscope*, Feb., 1930.

Amytal in Whooping Cough

Most excellent effects have been obtained in allaying the spasmodic attacks of whooping cough and securing undisturbed sleep from the use of amytal compound—a combination of amytal 1½ grains and amidopyrine 3½ grams. The initial dose of amytal compound, for a child of 1 year, is ¼ of a capsule in a teaspoonful of jelly; 1/3 of a capsule for a child 2 years and so on. The dose may be gradually increased each night until satisfactory results are obtained. —DR. J. G. HENDRICKE, Portland, O., in *Northwest Med.*, June, 1930.

Perineorrhaphy

Do not overlook the fact that a perineorrhaphy may enable a wife to win her husband back from the other woman.—*Urol. and Cutan. Rev.*

Removing Wax from Ear

For the removal of cerumen from the ear, a solution of bicarbonate of soda (a teaspoonful in a bowl of warm water), a syringe and a small, smooth, wire-ring curette are all that are necessary. The soda will soften the wax if it is not too hard. If the wax is very hard it may be softened by packing against the mass a cotton pledget soaked in peroxide of hydrogen.—DR. G. L. RICHARDSON, Fall River, in *Am. J. Surg.*, Apr., 1929.

Bladder Puncture

When retention of urine must be relieved by bladder puncture, the use of a trocar and cannula and the introduction of a small catheter is not so easy as it seems. We have found it expedient and most satisfactory to use, instead of the trocar, an 18-gage, spindle-tap needle. The bladder is emptied slowly, the wound is small and there is less chance of extravasation and infection.—DR. E. K. MORGAN, Brooklyn, in *Am. J. Surg.*, Apr., 1929.

Current Medical Literature

Calcification of Tuberculous Lesions Under the Influence of Irradiated Ergosterol (Viosterol)

For some time, Drs. C. Levaditi and Li Yuan Po, of the Pasteur Institute, Paris, have been engaged in the investigation of calcification of experimental tuberculous lesions in animals, under the influence of vitamin D (irradiated ergosterol—viosterol). In *Presse méd.*, Paris, Dec. 17, 1930, they furnish a detailed report of this experimental work on tuberculous rabbits, accompanied by histologic findings. An oily solution containing 10 milligrams of viosterol to the cubic centimeter was used, administered by the mouth.

From the studies the following conclusions have been reached by the authors:

1. — Irradiated ergosterol, administered by mouth to rabbits with tuberculosis lesions of slow evolution and showing a certain amount of tendency to spontaneous recovery, considerably increased calcification of the tuberculous lesions.

2. — Calcifition of the tubercles is the result of a change in the calcium metabolism, occuring especially in the cytoplasm of the bacilliferous, cellular elements entering into the constitution of these evolutive tubercles; i.e., monocytes, epithelioid cells and giant cells.

3.—The calcified deposits in the necrotic and caseified tuberculous foci result from the confluence of these intracellular calcic concretions. The formation of veritable mineralized shells follows, enclosing a necrobiotic tissue and Koch bacilli, generally deformed and staining badly.

4.—It is probable that the formation of these calcic shells checks propagation of the bacillary infection to neighboring tissues.

While pointing to certain clinical results by others, which seem to point to the therapeutic value of calcification of the lesions of tuberculosis, as being supported by their own experimental findings, the authors decline at the present stage to draw any therapeutic clinical conclusions from their work, leaving this to be determined by future observation and research. They are satisfied with the present experimental finding, that the administration of irradiated ergosterol (viosterol), in the ordinary dosage, is capable of effecting a protective calcification of the lesions of tuberculosis.

Colloids and the Cosmic Spectrum

In an article by Dr. Hermann Hille, of Chicago, entitled, "Colloids: Just What Are They?", appearing in *Eye, Ear, Nose and Throat Monthly* for Sept., 1930, the material presented in Dr. Hille's article in CLINICAL MEDICINE for March, 1925, page 160, is much elaborated and extended.

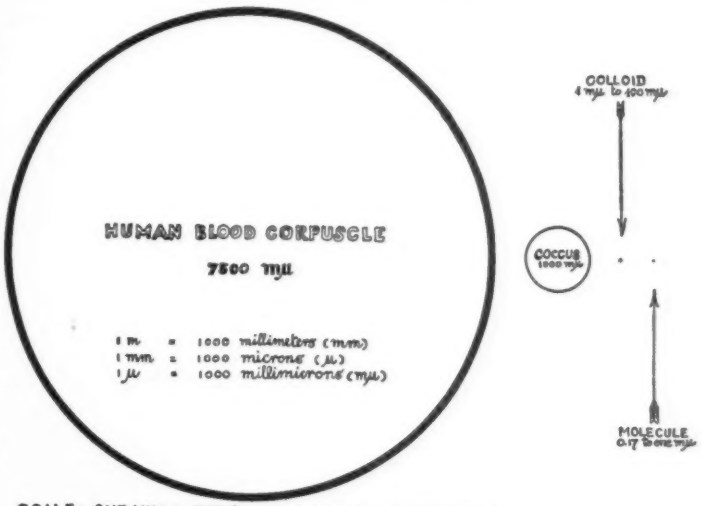

Fig. 1.—Relative Size of Colloid Particles.

In this article appear two diagrams which are so illuminating that they are reproduced herewith.

The first (Fig. 1) shows the size of a colloid particle, as compared with a human red blood corpuscle, a coccus and a molecule, and makes the matter so clear that no further words are required to elucidate it.

The second (Fig. 2) represents that part of

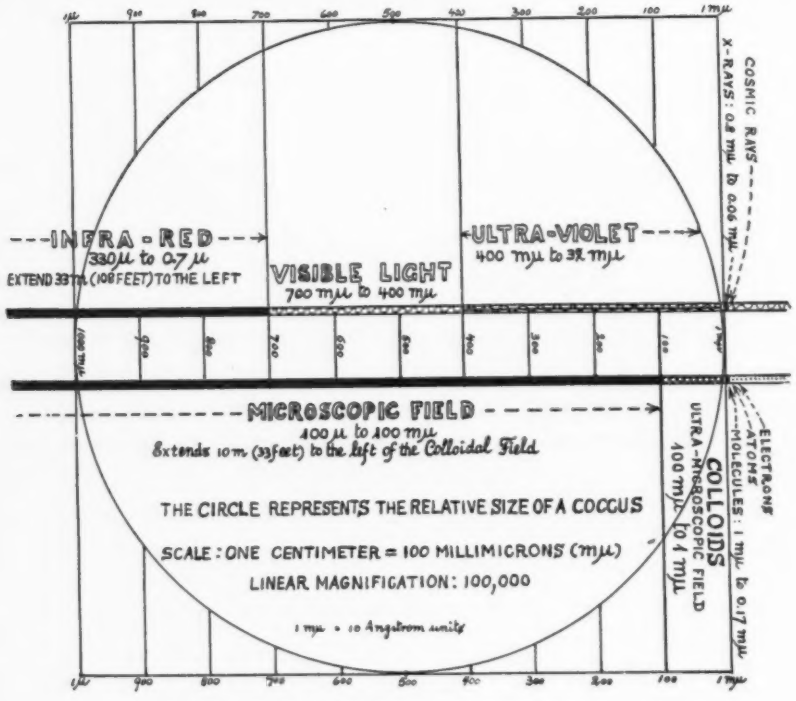
INFRA-RED
330μ to 0.7 μ
EXTEND 33 Ft. (10 FEET) TO THE LEFT
VISIBLE LIGHT
700 mμ to 400 mμ
ULTRA-VIOLET
400 mμ to 3 Å mμ
X-RAYS: 0.8 mμ to 0.06 mμ
COSMIC RAYS
MICROSCOPIC FIELD
100 μ to 100 mμ
Extends 10 m. (33 feet) to the left of the Colloidal Field
THE CIRCLE REPRESENTS THE RELATIVE SIZE OF A COCCUS
SCALE: ONE CENTIMETER = 100 MILLIMICRONS (mμ)
LINEAR MAGNIFICATION: 100,000
1 mμ = 10 Angstrom units
COLLOIDS
ULTRA-MICROSCOPIC FIELD
100 mμ to 1 mμ
ELECTRONS
ATOMS
MOLECULES: 1 mμ to 0.17 mμ

Fig. 2.—Parallelism Between the Spectrum Scales of Light and Matter.

the cosmic spectrum of vibrations, appearing as light, on the one hand, and as matter on the other, with which we are reasonably familiar. It shows, graphically, the relations between the sizes of tangible objects, like a coccus, and those intangible, but none the less *real*, things which we represent by such symbols as "atoms," "Angstrom units" and the like.

A careful study of these diagrams and meditation upon them can scarcely fail to open new vistas of perception of the marvels of the universe, of which we and our Earth are a part.

Acriflavine Treatment of Undulant Fever

In *Canadian M. A. J.*, Nov., 1930, Dr. D. S. Thurber, of Tlahualilo, Mexico, reports that, of 7 cases of undulant fever treated by injection of acriflavine hydrochloride, 5 were arrested within one month of starting treatment; in the other 2 cases the fever continued, but at a lower level.

In the ordinary adult the dosage started with 0.1 Gm., subsequently increased to 0.2 or 0.3 Gm. Usually 4 doses gave the maximum effect and further doses were of little benefit. The injections must be given slowly. The best results were obtained in patients treated during the earlier weeks of the disease. Following the injections there is a decline, then a rise with a final decline in the fever. No severe reactions were seen, nor any incapacitating arthritis.

Pain in the Back

Discussing the question whether backache is of mechanical or toxic origin, Dr. R. McE. Schauffler, of Kansas City, in *J.A.M.A.*, Dec. 6, 1930, remarks that careful attention to the history and to the mode of onset of the back pain will help to decide whether one is dealing with a sprain or a mechanical strain. For years, sacro-iliac displacements or sprains have been overplayed. Then the honors were divided between lumbosacral and sacro-iliac sprains. Now the pendulum has swung far to the opposite side and many articles in recent literature claim that all these back pains are toxic; myofascitis is the popular term.

As always, the truth lies between the extreme views. There are lesions purely mechanical and any associated inflammation is of a traumatic type and not at all of a bacterial type. There are many others which are purely toxic—a myofascitis or arthritis, similar to muscular or joint rheumatism in the limbs or to a toxic neuritis. In the back there is also a large group of a mixed type. Posture was a predisposing cause or injury an exciting cause, but the toxic element is responsible for the continuance of the trouble.

The local focus may be in the teeth or tonsils or any other lesion that could cause an infectious arthritis.

The author feels that the colon, as a possible focus causing infectious arthritis, is being overplayed. But the physician's duty is to investi-

gate all possible foci of infection and to treat any that may seem probable causes.

Treatment is largely mechanical. Rest of the patient and partial or complete immobilization of the back is indicated. The immobilization should be, as far as possible, in an anatomic position and the wearing of a support should be discontinued as soon as possible.

Patients with toxic lesions of the back, imposed on mechanical disturbances, naturally require a combination treatment.

Home Vs. General Hospital Childbirths

Based on an experience of 10 years' general practice and 5 years' practice limited to obstetrics and gynecology, Dr. W. B. D. Van Auken, of Troy, N. Y., in *New York St. J. Med.*, Sept. 15, 1930, states that, except for the possible greater frequency of infection in the general hospital and the limited ability of the nursing service for patients unable to afford a full-time nurse, the general hospital is a more advantageous place for a childbirth than the home.

Home childbirths are desirable and successful when there are no complications and when the patient does not demand the maximum relief from her pain. Inasmuch as it is impossible always to predict complications, general hospital childbirths insure greater safety.

It is obvious that the defects pointed out can be overcome only by absolute isolation of maternity from other patients and by closer supervision of employees and hospital technic.

Substitute for Insulin Injections in Diabetes Mellitus

The possibility of a substitute for insulin and the injection method in the treatment of diabetes mellitus is suggested by an article by Drs. H. Blotner and W. P. Murphy, of Boston, in *J.A.M.A.*, June 7, 1930.

A study of the effect of the oral administration of certain aqueous liver extracts, on the blood-sugar of twenty-three diabetic patients, indicates that they had a beneficial effect on the blood-sugar of these patients.

The average decrease in the blood-sugar, eight hours after the control test meal, in eighteen out of nineteen diabetic patients, was 32.2 mg.; the average decrease, eight hours following the test meal with the addition of the liver extracts, was 79.8 mg. in these cases; while the average decrease in the twelve diabetic patients that were given the test meal and 10 units of insulin subcutaneously was 67.9 mg. for the same period of time.

Four patients with diabetes, taking an aqueous extract, have been observed with repeated fasting blood-sugar determinations for sixty-eight days, twenty-nine days, thirty-one days and five months, respectively. In the first case the blood-sugar remained at a lower level when the liver extract was taken, and then increased when it was omitted. In the second case the blood-sugar was also at a lower level during liver extract therapy than previously, and when 7 units of insulin was injected subcutaneously twice a day, the blood-sugar level was slightly lower than during the period of liver extract therapy. In the third case the blood-sugar level during liver extract therapy was at a slightly higher level than during the period when 13 units of insulin was taken. This may have been affected by the use of increased sedatives during this time. In the fourth case the blood-sugar was stabilized by the liver extract, and the urinary sugar was decreased.

These observations, the authors think, suggest that certain aqueous liver extracts contain a blood-sugar-reducing substance, active when taken by mouth, nontoxic and with an effect on the blood-sugar concentration similar to that obtained with small doses of insulin, especially over a period of eight hours.

Send Your Name for the First Issue of JOURNAL OF VITAMINS.

Medical (Sippy) Treatment of Peptic Ulcer

The present status of 1,244 cases of peptic ulcer, admitted to the Presbyterian Hospital, Chicago, between 1912 and 1927, is reported upon by Dr. R. C. Brown, of Chicago, in *J.A.M.A.*, Oct. 19, 1930.

Of the 1,130 patients treated medically (Sippy method), 49.5 percent are reported cured and 16.7 percent satisfactorily improved —a total of 66 percent of cases in which a good medical result was obtained. An additional 10 percent report moderate improvement. In 20 percent, medical measures failed. Ninety-four (94) patients were referred for surgery. Approximately 20 percent of patients with gastric and duodenal ulcers now being admitted to hospitals require surgical care.

All the patients reported cured or improved have been under observation since their discharge from hospital for two and a half years or much longer.

The inability of physicians to insure an ulcer-bearing individual against recurrence constituted the most serious problem to be faced.

Reduction of High Blood Pressure

In *M. J. & Record*, Apr. 16, 1930, Dr. R. H. Rose, offers the the following method of reducing high blood pressure:

1.—Weight reduction is an effective means for the reduction of high blood-pressure.

2.—Experience teaches that the diastolic and systolic pressures can be reduced approximately 50 percent of the amount by which they exceed 80 and 120, respectively.

3.—By means of rational feeding, patients with so-called essential hypertension may be carried along for years on the lowered pressure, reducing the number of deaths from heart and arterial causes.

4.—A period of overeating is likely to cause a rise in the pressure to its former high point.

5.—Advantages of weight reduction and subsequent dietary control in hypertension: Greater reduction; results more permanent; treatment is etiologic and prevents heart, arterial, and kidney developments.

Sulphocyanates in Hypertension

Reviewing the recent literature on the value of sulphocyanates, an editorial in *Internat. Med. Digest*, Oct., 1930, states that it is quite apparent, after an examination of the recent contributions on this subject, that we have, in sulphocyanates, a means to relieve hypertension and the distressing symptoms which go with it.

It is estimated that from 80 to 90 percent of patients with hypertension were either completely or markedly relieved by the sulphocyanates of sodium or potassium, in an average dose of 6 grains (0.4 Gm.) daily.

Since 140,000 persons in the United States die each year from the consequences of hypertension, any means that will afford relief to so many sufferers, such as the sulphocyanates apparently do, is a forward step in the art of medicine.

Digitalis in Ambulatory Cardiac Patients

In digitalis therapy, it has been commonly accepted that, in order to produce the best results, it is necessary to digitalize all patients to a point just short of minor toxic symptoms, and that, in order to maintain these results, it is necessary to maintain the same "effective concentration" of the drug in the body.

From a clinical study followed for some years, of the pharmacologic action of digitalis, in patients with auricular fibrillation, in the cardiac clinic of Bellevue Hospital, New York, as given in J.A.M.A., Oct. 25, 1930, Drs. H. Gold and A. C. de Graf find that, in the average ambulatory cardiac patient with auricular fibrillation and moderate heart failure, a much lower "effective concentration" of digitalis in the body suffices to produce full therapeutic effects than is required in the average bedridden patient in advanced congestive failure.

In the ambulatory patient, full therapeutic effects, as judged by the usual clinical criteria of improvement, can be produced by daily repetition of a relatively small dose of the drug (about 4½ grains—0.3 Gm.), that can then be continued as the daily maintenance dose without producing toxic symptoms. As is well known, such results cannot be obtained with such small doses in the average patient with far advanced congestive failure; and the larger daily doses usually required in these cases cannot be long continued without producing toxic symptoms.

In the average ambulatory cardiac patient there is a wide margin between the minimum dosage that produces full therapeutic results and the maximum that can be tolerated without toxic symptoms. This margin is frequently smaller in patients with far advanced failure and the latter often require the largest dosage that can be tolerated in order to produce the best results.

It is the accepted practice to use relatively larger doses of digitalis to produce the full therapeutic effects, and then relatively smaller daily doses, in order to maintain these results for long periods of time. The usual explanation is that the smaller doses are necessary in order to maintain the high "effective concentration" of the drug produced by the larger ones. Evidence has been set forth proving, however, that the "effective concentration" of the drug within the body, necessary to maintain the full effects, is usually much lower than that required to produce them in the beginning.

The "Easy" Diet

Predisposition to certain diseases or constitutional weakness of the digestive apparatus requires observance of the principle of the "easy" diet; that is, easily handled by the individual.

In *Med. Times*, Oct., 1930, Dr. E. E. Cornwall, of Brooklyn, N. Y., observes that a useful criterion for selecting foodstuffs for the "easy" diet is found in the way they spoil; they either turn sour or putrefy. Milk, cereals, fruit and vegetables turn sour; animal flesh and eggs putrefy. The foods which sour are generally "easier" foods than those which putrefy. Souring is usually caused by the lactic acid fermentation of carbohydrate, and this lactic acid tends to keep down putrefaction.

The practical bearing of these facts on the "easy" diet appears when we consider the bad effects on health which the products of the putrefaction of protein in the alimentary canal may produce, especially in certain conditions, and the menace to health presented by the development of large numbers of putrefactive types of bacteria in that canal.

Influence of Suprarenal Cortex on Carcinoma, Sarcoma and Melanoma

In *Am. J. Cancer*, Jan., 1931, Dr. K. Sugiura, following experimental work in animals regarding the influence of extracts of suprarenal cortex on the growth of carcinoma, sarcoma and melanoma, concludes:

1.—That the toxic action of extracts of suprarenal cortex (sheep and cattle), on the Flexner-Jobling rat carcinoma, the Sugiura rat sarcoma, the Bashford mouse carcinoma, a transplantable mouse melanoma, and the Rous chicken sarcoma has been investigated.

2.—Single or repeated subcutaneous or intramuscular injections of an alcoholic, ether, aqueous, or glycerine extract of the cortical tissues have no apparent influence upon the growth of transplanted tumors.

3.—Injection of choline solution or feeding with sodium nitrite, chemicals known to cause a prompt fall of blood pressure, failed to show any inhibiting effect upon the tumor growth.

4.—Extracts from the adenomatous growths of sheep suprarenal glands, which are almost completely free from medullary tissue, produced no effect upon the growth of neoplasms.

5.—Fresh sheep suprarenal cortex or its extract failed to destroy cancer cells in vitro.

6.—The repeated subcutaneous injection of extracts of the suprarenal glands of sheep, of immune and normal young rats, and of suckling rats, does not effect the growth of rat and mouse carcinomas.

Viosterol in Treatment of Pulmonary Tuberculosis

In *Münch. med. Wchnschr.*, Feb. 7, 1930, Dr. H. Menschel reports good results in the treatment of pulmonary tuberculosis with concentrated viosterol. Most of his 58 patients were adults, who were under treatment with viosterol for from six to twelve months.

Roentgenograms and physical signs indicate that exudative processes in the lungs were absorbed and that there was healing in many cases, by scar formation, in from four to six months. The incidence of pulmonary hemorrhage was greatly reduced. The patients expectorated less, their temperature was lower and they gained in weight. The diazo reaction changed from positive to negative during the treatment. Tuberculosis of the bones, larynx and skin also showed a tendency to heal. Twelve of the sixteen cases of laryngeal tuberculosis showed improvement in from one to two months. The therapeutic dosage is 5 drops of a 1-percent solution of viosterol (250 D) once or twice daily.

Signs of Impending Diabetic Gangrene

Certain premonitory signs of gangrene of the extremities in diabetic patients are given by Dr. D. W. Kramer, of Philadelphia, in *M. J. & Record*, Oct. 1, 1930.

A variety of lesions—rose spots, scars, scar-like depressions, blebs and small areas of gangrene—may be found on the extremities of diabetics. These are not necessarily new developments in this disease, but their significance has not been sufficiently emphasized.

Almost invariably, when these lesions were present, a history of circulatory impairment, such as pain, coldness, cramps in the legs, and such findings as pallor of the feet, absence of dorsalis pedis pulsation, and sclerotic changes of the vessels were obtainable.

The appearance of the lesions, their subsequent course and the presence of symptoms and signs which are definitely associated with circulatory disturbances, all seem to favor the theory that the lesions are the result of pathologic changes of the smaller vessels. However, in the case of blisters, neurotrophic influences cannot be excluded as a contributory factor.

Some of the patients who presented these lesions in one form or another, later developed gangrene on a larger scale. This development, together with the assumption that the lesions are evidences of arterial changes, leads to the suggestion that they be looked upon as early or warning signs of impending gangrene.

Injection Treatment of Varicose Veins

In a review article on the subject of the injection method of treating varicose veins, in *Am. J. Surg.*, Oct., 1930, Dr. H. O. McPheeters, of Minneapolis, states that for the sclerosing solution he prefers invert-sugar 75 percent and the dextrose 50 percent, in combination with sodium chloride 30 percent. Quinine and urethane solution may be used for injecting varices that have been missed at the first sitting, or for small varices.

Pregnancy is no longer considered a contraindication, particularly during the first four or five months. The cardiovascular case is on the borderline, but no patient should be injected who is so sick that he must be in bed.

If a patient presents much edema and swelling of the feet, it is very important to make a differential diagnosis as to the cause and to use the Trendelenburg and Perthe tests as aids. If the Perthe test is positive, we know that the deep system is functioning and competent to take care of all the venous blood from the extremity.

Dr. McPheeters prefers to use the effect of gravity to empty the vein as much as possible, and then retain the solution locally by the use of tourniquets. The leg may be dropped below the level of the table or the patient may be asked to sit up, if more back pressure is desired to offset the pressure under which the solution is injected. He keeps the patient absolutely relaxed and motionless until the desired sclerosing effect has taken place. It is preferable to treat the whole case at one sitting, whether on one or both legs. If the condition is very extensive on both legs, then one leg only may be treated at one sitting.

It has been stated that periphlebitis and sloughs will not occur with sugar solutions. This is not quite true, but the sugar solutions are by far the safest to use and the least likely to cause complications.

The injection treatment of varicose veins must be accepted as a mode of therapy which is here to stay and as a great step forward from the disfiguring and at time almost mutilating operative procedures of the past.

Bacteriophage in Surgery

The bacteriophage-Orr method is the absolute antithesis to the Carrel-Dakin procedure; in place of antiseptics, a dressing is used purposely without germicidal power; the wound is left without interference for several weeks or even months, not disturbing the action of the products of bacteria (bacteriophage). This treatment is applied to osteomyelitis and other infective lesions.

In *Internat. J. Med. & Surg.*, Sept., 1930, Dr. F. H. Albee, of New York, states that upwards of 150 cases have been treated by the closed method since it was begun over 3 years ago. In osteomyelitis, an incision to expose the diseased area is always made in the long axis of the limb, but not carried through any muscle group; sequestra and bone ledges are trimmed until the bone cavity is saucer-

shaped; when this is completed, the wound is packed amply with sterile vaseline and vaseline-lined gauze, covered with more gauze and absorbent cotton and the limb, including adjacent joints, encased in plaster and left undisturbed for 8 or 10 weeks; this treatment is repeated until healing, except that the joints are not included in the plaster splint.

The action is two-fold: mechanical and that of the newer principles of bacteriology, which have to do with the nature and action of the bacteriophage.

Dr. Albee remarks that, in several cases of compound, comminuted, infected fractures and virulent suppurating joints, he is convinced that, not only limbs but lives have been saved by the employment of this method. It is simple in technic, easy in application and very economic, as the patient need not be hospitalized.

The Control of Dental Caries

A review of the literature and observation of the results of dietary experiments in groups of children with dental caries, by R. W. Bunting, D.D.S., and his associates, of Ann Arbor, as given in *Am. J. Dis. Child.*, Sept., 1930, shows that practically all lead to the conclusion that a well-balanced diet is apparently inhibitive of dental caries.

The general diet recommended by different groups of observers was fortified by milk and green vegetables, but sugar was eliminated as far as possible—a total of about 1/3 pound a month being the limit allowed.

The reduction of sugar was based on the assumption that the average child consumes too much carbohydrate, in the form of candy and highly sweetened foods, as a result of which the appetite for other foods is perverted and a state of nutritional unbalance is produced; furthermore, that candy and sticky confections retained about the teeth afford a most favorable medium for acid fermentations in the mouth. It is interesting to note that children so fed grew normally, were in good health and were notably free from common colds and other infectious diseases. Also, dental caries was almost completely arrested.

The fact that dental caries is frequently checked by the feeding of a normal diet does not prove that the disease is wholly due to malnutrition. There are many factors which may be equally important in the control of dental caries. In regard to the view that dental caries is an infectious disease, due to the overgrowth of aciduric bacteria, the drugs Metaphen and Hexylresorcinol have been found very effective.

In a clinical test of **Metaphen** in the control of dental caries, it was found when the teeth were polished by a dentist and Metaphen was applied directly to the tooth surfaces, *B. acidophilus* was eliminated in from 50 to 60 percent of the cases, and in the remainder repeated treatments decreased the growth and character of the organisms. Polishing the teeth alone did not eliminate the organisms.

Avertin and Pernocton as Basal Anesthetics*

Basal anesthetics are substances which are not themselves capable, in non-lethal dosage, of producing surgical anesthesia, but act as the main factor in the subsequent production of general anesthesia. They are pre-anesthetics.

In *Klin. Wchnschr.*, Aug. 30, 1930, Dr. I. Lendle, discussing Avertin and Pernocton, states that Avertin is effective only for a short time, that overdosage is necessary to obtain a sufficient duration of the anesthesia and thus the difference between the anesthetic and the lethal dose is very slight. It does not meet the requirements of a basal anesthetic.

Regarding Pernocton, the author criticizes the slowness of its anesthetic action and its extremely long duration. The author thinks that Pernocton is even less suitable for basal anesthesia than Avertin. The disadvantages of Pernocton are that total anesthesia cannot be effected with it and that it gives rise to disagreeable complications and after-effects.†

Headaches with Sore Scalp

Headaches due to nasal ganglion neurosis are very common but are seldom correctly diagnosed. This headache is first parietal, then occipital and often a combination of both. Tenderness of the scalp over all or part of the affected areas is very often present and tenderness and stiffness of the posterior cervical muscles are common.

In *New York St. J. M.*, Sept. 1, 1930, Dr. G. B. Fernlund, of Richmond Hill, N. Y., has found that topical applications to the **sphenopalatine ganglion** and anterior ethmoid nerves are successful in these cases. He uses a strong cocaine solution, a weak solution of phenol in oil, or a strong solution of mercurochrome in alcohol and glycerine, depending on the case. If response to this treatment is unsatisfactory, he injects the nasal ganglion with 5-percent phenol in alcohol. Endocrine glandular treatment often assists.

*Abridged from an abstract in *J.A.M.A.*, Nov. 8, p. 1451.

†The new American barbituric synthetic, Nembutal, is reported, by several workers, to be an excellent basal anesthetic.

NEW BOOKS

Da Costa: Surgery

MODERN SURGERY; General and Operative. *By John Chalmers Da Costa, M.D., LL.D., F.A.C.S., Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia; Surgeon to the Jefferson Medical College Hospital; etc. Assisted by Benjamin Lipshutz, M.D., F.A.C.S., Surgeon to the Mt. Sinai Hospital; Associate in Neuro-anatomy, Jefferson Medical College, etc. Tenth Edition, Revised and Reset with 1,050 Illustrations, Some in Colors. Philadelphia and London: W. B. Saunders Company.* 1931. *Price,* $10.00.

Dr. Da Costa's "Modern Surgery" has been before the profession since 1894. This is the tenth edition. To say that it is a well-known book would be merely trite, but it might well be described as a leading exposition of modern American surgery.

The new procedures and improvements in surgery which have come to light since the last revision (1925) have been included in this edition. That is to say, Dr. Da Costa has used his ripened judgment in selecting from the new in literature what he considers to be of permanent value, rather than mere fads or fashions, and has omitted time-hallowed methods which better knowledge proved to be erroneous. This edition is practically rewritten.

Among the new subjects included are: The application of the newest chemotherapeutic methods; the newer methods of treating wounds, contusions and burns; a clear and practical presentation of the injection treatment of varicose veins; the newest in surgery of the respiratory system; a complete and radical revision of the procedures in abdominal surgery; a completely rewritten discussion of anesthesia and anesthetics, both general and local, including preanesthesia; a strikingly practical presentation of genito-urinary work, including the new methods of managing gonorrhea, prostatic conditions, genital tuberculosis and neoplasms; a radical revision of the section on surgical tuberculosis, and a modern presentation of fractures, dislocations and bone sarcoma.

Boyd: Pathology of Internal Diseases

THE PATHOLOGY OF INTERNAL DISEASES. *By William Boyd, M.D., M.R.C.P., Ed., Dipl. Psych., F.R.S.C., Professor of Pathology in the University of Manitoba; Pathologist to the Winnipeg General Hospital, Winnipeg, Canada. Illustrated with 298 Engravings. Philadelphia: Lea & Febiger.* 1931. *Price,* $10.00.

Dr. Boyd's volume is not merely a descriptive textbook of the pathology of internal diseases; it is a clinical pathology, giving vivid word pictures of the diseased tissues, with the clinical features *as seen by the physician*, as well as their morbid anatomy. As Dr. Lewellys F. Barker well says in his foreword: "The author has supplied medical practitioners with a much needed treatise, since it tills a field that nowhere else has been satisfactorily cultivated. . . . If this work contained no other sections than the important paragraphs dealing with the correlations of the findings of pathologic physiology with the symptoms met with by clinicians, it would be heartily recommended."

The volume contains 17 chapters, dealing with the general and special pathology of the socalled medical diseases, arranged by regions and symptoms. In every chapter the clinical aspects are stressed and the reader is constantly confronted with the relationship between lesions and the symptoms expressed by them. This is the cardinal note, and the physician consulting this text is encouraged to act as his own pathologist and to look at symptomatology merely as the effects of changes in the organs by which their normal functions are disturbed. By the mental vision of the underlying basis of disease pictures, a rational and logical therapeutic procedure is suggested.

Besides being of great value to the practicing clinician, the book is one that should make a special appeal to teachers and students of internal medicine.

Walscheid: Abdomino-Pelvic Diagnosis in Women

ABDOMINO-PELVIC DIAGNOSIS IN WOMEN. *By Arthur John Walscheid, M.D., Director of Obstetrical and Gynecological Department of Broad Street Hospital; Director of Obstetrical and Gynecological Department of Pan-American Medical Center and Clinics, New York City, etc. With three hundred ninety-seven illustrations, One color plate. St. Louis: The C. V. Mosby Company.* 1931. *Price* $12.50.

In this clinical diagnostic monograph of nearly one thousand pages, Dr. Walscheid approaches the consideration of abdomino-pelvic disease in women almost entirely from the constitutional angle, By this is meant the peculiar body formation of the human female which is disposed for the prime function of breeding. The book therefore has an anthropologic as well as a diagnostic bearing.

The author shows that the etiologic factors associated with abdomino-pelvic diseases in women are mainly to be sought in some factor directly or indirectly connected with her sex functions—in her organic development for fitness or unfitness for wifehood or maternity or in the natural declination of these special dispositions. Abdomino-pelvic pathology is not, in

the main, anatomo-pathology, but physiologic pathology, and this applies whether the woman goes through the processes of child bearing and lactation or whether she deliberately or accidentally avoids these contingencies. In other words, woman, in a pathologic sense, can never escape from the consequences of her sex.

Most of the author's work, therefore, is a consideration of special constitutional form factors and their effects on function. A peculiar statement of the author is that it is not the powerfully muscular and robust woman who is best fitted to withstand the functions of child bearing and their consequences, but rather the apparently frail type.

Throughout the volume the author draws freely on "Jayles' Morphology of the Human Female," but by this it is not intended to imply that this is anything more than illustrating his own ideas.

The work is divided into two main parts. Part I deals with general gynecology and includes all the physical and physiologic factors affecting it. Part II deals with special gynecology, covering the diseases of the special female generative organs and organs associated with or affected by their normal or pathologic functioning.

Consideration of the general subject, as treated by the author, will offer new viewpoints to the general physician, or gynecologist, in dealing with the ills of his female patients; and the student or new graduate should also find much in its study which will help him at the outset of his career in judging his patients from an unusual angle, not usually included in textbooks or courses of lectures.

Harding: Fads, Frauds and Physicians

FADS, FRAUDS AND PHYSICIANS. Diagnosis and Treatment of the Doctors' Dilemma. By *T. Swann Harding. New York: Lincoln MacVeagh, The Dial Press.* 1930. *Price,* $3.50.

The medical profession has in all ages received its due meed of praise and appreciation for benefits conferred; sometimes this was belated but, in the long run, good, progressive work was recognized. Hence it is equitable that a modicum of criticism of the profession and its work should appear from time to time and, if such criticism points to matters that are remediable, it is all the more valuable.

Mr. Harding takes issue with many practices which he finds in the present-day practice of medicine. He has adopted a method familiar to special pleaders, in selecting from medical and other journals only articles that support his own views, that the present-day methods of individual medical practice are more or less deplorable, if not damnable, and that everything connected with the medical service of the people would be perfected if it could only be made a State-organized service.

Shakespeare says that the devil can quote Scripture for his purpose, and we do not object to Mr. Harding winnowing contemporary magazine and newspaper literature for items which, truly or not, focus the attention on glaring mispractice in medical matters. But Mr. Harding is surely aware that his method is a logical error; it is an attempt to argue from the particular to the general. There are, no doubt, some incompetent doctors; there are, no doubt, some fee-splitting doctors and venal and avaricious surgeons, who operate unnecessarily or overcharge frightfully; furthermore, it may be admitted that there are, here and there, practicing physicians who may be classed as backward in intelligence, that doctors and pharmacists often err and that the people might better choose a good doctor if some kind of medical advertising were ethical and permissible.

But it cannot be admitted that the vast majority of the profession comes under any of these heads. They are honorable, generally intelligent, and conscientious gentlemen, practicing their art with all the ability they can muster and according to the best means that scientific progress has suggested. It is true that, very often, measures which experimentation has sanctioned do not succeed in clinical practice. It is also true that the means, both diagnostic and therapeutic, available to the doctor fall far behind perfection. But is this to be classed as professional incompetency? Progress is usually a matter of trial and error.

If Mr. Harding had looked at the individualistic medical professon with an unprejudiced mind, he might have discovered that by its efforts we are today practically free from epidemics; that smallpox, yellow fever, typhoid and diphtheria, to say nothing of many other lesser diseases, are practically banished; that loathsome and disabling diseases are but rarely observed in our streets; and that the treatment of mentally diseased unfortunates today is both humane and efficient.

The present generation has many things for which it may thank the untiring, sympathetic and humanistic work of individual members of the great medical profession. And nobody can say that, compared with other workers, their rewards, either monetary or in honors, have been conspicuous.

Mr. Harding looks to State Organized Medicine as a Panacea. Perhaps it might be, but there is nothing in his book, beyond his own assertions, to prove it. Paid public servants in a State medical service would, in all likelihood, be much the same as other paid public servants, without much initiative or incentive to do anything beyond routine. Their index of intelligence would not probably be higher (we think it would be lower) than that of the present individualistic profession which Mr. Harding cavils at.

Some 12 years ago we were told that national regulation of alcoholic consumption would close our jails and State asylums and that crime would be a thing of the past. Today we are not quite convinced about such effects. The people will get State Medicine if they insist on it, but they may find that their ultimate condition will be made much worse than the present.

We do not wish to belittle Mr. Harding's criticisms, so far as they are justified. The profession is well aware that there are black sheep within its fold and that there are many things to be remedied. These things should be remedied, especially the abuse of specialism, and it is a fault of the present professional organ-

ization that some of them at least are not remedied. But the present defects in the administration of the art of medicine will hardly be remedied by recourse to a State Medical Service.

Groves and Brickdale: Textbook for Nurses

TEXTBOOK FOR NURSES; Anatomy, Physiology, Surgery, and Medicine. *By E. W. Hey Groves, M.D., B.Sc., M.S., F.R.C.S., Surgeon to the Bristol General Hospital; etc., and the Late J. M. Fortescue-Brickdale, M.A., M.D. (Oxon.), M.R.C.P. (Lond.), Senior Assistant Physician, Bristol Royal Infirmary; Clinical Lecturer, University of Bristol; etc. The Medical Section Revised by J. A. Nixon, C.M.G., M.D. (Cantab.), F.R.C.P. (Lond.), Professor of Medicine and Director of Clinical Medicine in the University of Bristol; etc. Fourth Edition. New York and London: Humphrey Milford, Oxford University Press.* 1930. *Price* $6.50.

The object of the authors in writing this textbook has been to provide a comprehensive work for the use of nurses, which would supply them with information in anatomy, psysiology, surgery and medicine, to supplement the lectures usually given by members of the medical and surgical hospital staff. The matters dealt with elucidate the principles of medical and surgical treatment which the nurse must assist in carrying out. Technical details of nursing handicraft are omitted.

The book is what it is intended to be: a simple epitome of the main branches of medical knowledge, expressed in an elementary and simple way. The fact that it has run into four editions with several reprintings is a proof that it has fulfilled its purpose and supplied a need. As a student's manual it covers all the ground laid down by the British General Nursing Council for the examinations of nurses.

The printing is clear and the price reasonable.

Faber: Nosography

NOSOGRAPHY; The Evolution of Clinical Medicine in Modern Times. *By Knud Faber, M.D., LL.D., Professor of Internal Medicine, University of Copenhagen. With an Introductory Note by Rufus Cole, M.D., Director of Hospital, Rockefeller Institute. With Twenty-two Full Page Portraits. Second Edition, Revised. New York: Paul B. Hoeber, Inc.* 1930. *Price* $3.75.

In this fascinating volume the author traces the evolution of the scientific, clinical and experimental methods which have brought internal medicine to its high present-day status.

The development of the clinical entities known as diseases is unfolded, together with the idea associated with those clinicians who considered disease in general only in the light of a physiologic functional disturbance. In both cases, experimental physiology, as well as surgical and pathologic anatomy, played their roles in the unfolding of conceptions which are now accepted as filling the conditions. Bedside observations and laboratory investigations today are only the applications of methods of seeking the determined causes of morbid phenomena.

Physicians will find the story as related by Professor Faber charmingly and lucidly told. The opinions expressed may not always be agreed with, but the book is more historical than controversial or opinionated.

The nucleus of this work first appeared in the *Annals of Medical History*. Like other books of the same kind published by Hoebet, it leaves nothing to be desired in printing and bookmaking. It is a library piece.

Gesell: Mental Growth of Child

THE GUIDANCE OF MENTAL GROWTH IN INFANT AND CHILD. *By Arnold Gesell, Ph.D., M.D., ScD., Director of the Yale Psycho-Clinic; Professor of Child Hygiene, Yale University; Author of "The Mental Growth of the Preschool Child," "Infancy and Human Growth." New York: The Macmillan Company.* 1930. *Price,* $2.25.

"The Guidance of Mental Growth in Infant and Child" is not destined to become a best seller. This is not because the book lacks merit. The fault lies with the mothers themselves. Most of them feel that because they beget the children they are *ipso facto* endowed with the necessary qualifications to rear them. According to the statistics compiled by Gesell, regarding the relationship of death by accident to other causes in early age, children of 4 to 8 years are the most frequent victims of the traffic of the highways. That safety is not a matter of age, but of training and attitude.

The opening chapter dealing with the parental doctrines and methods of Susannah Wesley is an intensely interesting human document. She had nineteen children, thirteen of whom succumbed early. Another of particular interest is that on the Guidance Nursery of the Yale Psycho-Clinic.

In child research only one country is ahead of America. It is that much maligned, fiery-red country, Russia. Pope's dictum that "The proper study of mankind is man" has, in America, been changed to read "The proper study of mankind is the child," says Gesell. For that we rejoice.

The book is not especially inspiring, to the average reader, as it is a report of research, rather than a practical manual, but students of sociology and welfare workers will find it useful. One of the chapters gives helpful points for the guidance of those who are about to adopt a child. S. E.

Medical Clinics of North America

MEDICAL CLINICS OF NORTH AMERICA. *Mayo Clinic Number. Volume 14, Number 3, November,* 1930. *Philadelphia and London: W. B. Saunders Company. Issued Serially, One Number Every Other Month. Per Clinic Year, July,* 1930 *to May,* 1931. *Paper* $12.00; *Cloth,* $16.00.

The November, 1930, number of the *Medical Clinics of North America* is devoted to 28 short contributions from the Mayo Clinic, Rochester, Minn.

The series opens with three papers by Dr. G. B. Eusterman and associates, two of which

concern peptic ulcer and the third metastasizing prostatic carcinoma. Dr. W. C. Alvarez has a good paper entitled, "Mesenteric Lymphadenitis in Adults a Cause of Pseudo-appendicitis, Indigestion, Diarrhea and Arthritis."

Other papers of interest to the general practitioner are: "Systemic Blastomycosis," by Dr. Hamilton Montgomery; "Obesity," by Dr. C. J. Barborka; "The Differential Diagnosis of Asthma," by Dr. C. K. Maytum; "Some Medical Aspects of Prostatic Obstruction," by Dr. H. C. Habein; "Roentgenologic Signs of Postoperative Gastrojejunal and Jejunal Ulcer"; and "Purpura of Infectious Origin (Urticaria Hemorrhagica)" by Drs. L. C. Stuhler and A. C. Nickel.

Most of the contributions are descriptions of rather unusual types of cases.

Blanton: Normal Physical Signs

A MANUAL OF NORMAL PHYSICAL SIGNS. *By Wyndham B. Blanton, B.A., M.A., M.D., Richmond, Virginia, Assistant Professor in Medicine, Medical College of Virginia. Second Edition. St. Louis: The C. V. Mosby Company.* 1930.

This is a brief synopsis of the physical findings which may be noted during the examination of a normal healthy subject. The matter is arranged regionally and may be readily consulted. The book should be very useful to students and to teachers of clinical medicine and, especially so to those progressive physicians who are fitting themselves to make adequate and valuable periodic health inventories. There are many works describing pathologic physical signs, but few which lay stress on normal findings, with which every diagnostician should be thoroughly familiar.

Pitkin: Achievement

THE PSYCHOLOGY OF ACHIEVEMENT. *By Walter B. Pitkin. New York: Simon and Schuster.* 1930. *Price,* $3.50.

What is achievement? How does it differ from ordinary success?

"Achievement is distinguished, successful endeavor, usually in the face of difficulties. As such it always possesses two characteristics: first a certain superiority of *aim;* and, second, exceptional skill in *execution*. . . . For every achievement there is a corresponding art."

Thus Pitkin sets the stage for his fascinating clinic for the study of the etiology, symptoms, diagnosis and progress of achievement—for a demonstration of the reason why certain pegs are square and why they will not fit into round holes.

His charts and diagrams for analyzing the makeup of the human soul (if one chooses to use that word) are surprising and enlightening and furnish a formula, the intelligent use of which should enable one to form, in many instances, an accurate estimate of the achievement possibilities possessed by the man being studied.

But the outstanding feature of this book, as of his "Psychology of Happiness," which we reviewed some months ago (CLIN. MED. AND SURG., Dec., 1929, p. 933), is the penetrating and carefully analyzed case histories of men and women who have (or have not) achieved, in a more or less conspicuous way. He rates Warren G. Harding as an example of "triple zero achievement," and Charles E. Hughes as a giant in this line.

The outstanding factors in achievement, as listed by a group of prominent Americans, are "perseverance, energy, application, hard work and diligence or industry." And the greatest of these, says Pitkin, is *energy!* Interest, also is of great importance; and controlled (not killed) emotions; and intelligent direction of effort toward a predetermined goal.

For the man who is dissatisfied with his accomplishments (as every one of us should be), here is a source of stimulus and a guidebook to the country of hitherto unrealized dreams. The thinker who reads this volume studiously and uses its suggestions, will profit largely. The non-thinker will read no more than the first ten pages, for, "To succeed in great affairs (one must), think early and often!"

Pitfield & Schaffer: Bacteriology

A COMPEND OF BACTERIOLOGY INCLUDING PATHOGENIC PROTOZOA. *By Robert L. Pitfield, M.D., Attending Physician, Germantown Hospital, Philadelphia and Howard W. Schaffer, M.D., Pathologist to the Memorial Hospital, Philadelphia; Assistant in Dermatological Research, University of Pennsylvania. Fifth Edition, with 4 Plates and 82 Other Illustrations. Philadelphia: P. Blakiston's Son & Co., Inc.* 1930. *Price,* $2.00.

This compend of bacteriology is designed to serve the needs of the medical student preparing for examination and for the practitioner of medicine who desires to acquaint himself with the principal facts of that science.

In this fifth edition the matter has been brought up to date and the whole subject, including the technic of preparing cultures, is outlined.

Gunnarsson: Seven Days' Darkness

SEVEN DAYS' DARKNESS. *By Gunnar Gunnarsson. Translated by Roberts Tapley. New York: The Macmillan Company.* 1930. *Price* $2.00.

This curious tale, depicting something of the strangeness and grimness of Iceland, turns upon the strange psychologic processes which lead to madness.

A volcanic eruption near Reykjavik shrouded the city for seven days with showers of ashes. The sky was darkened, the sun obscured, and by night a sheet of flame from the distant mountain added to the horrible appearance of the city. To make matters worse, a virulent form of influenza broke out and assumed the proportion of a plague.

Doctor Ellidagrimur, one of the most prominent and successful physicians of Reykjavik, who devoted his best efforts to the care of the sick, went mad on the seventh day and voluntarily committed himself to an institution. His close friend and associate during the tragedy, narrates the stages by which a strong and apparently contented man was driven to insanity.

An old classmate of Ellidagrimur's, and a former suitor of the doctor's wife, Vigdis, figures prominently in the story. This man, Pall Einarrson, scoffs at Ellidagrimur's ideals, which are founded on his love for Vigdis and his trust in her. Einnarrson's wild and apparently aimless remarks and his inexplicable behavior tend toward the vengeful undermining of that faith.

Through the ghastly night which lasted seven days, through the terrific nervous and physical strain of the battle with the plague, runs the thread of Einarsson's diabolic plot against Ellidagrimur's sanity.

Gunnarsson has drawn a remarkable picture of an entire social group under the stress of public calamity.

E. J.

Sinclair: Microbiology and Elementary Pathology

MICROBIOLOGY AND ELEMENTARY PATHOLOGY; For the Use of Nurses. By *Charles G. Sinclair, B.S., M.D., Major, Medical Corps, U. S. Army. Instructor in Bacteriology, Army Medical School. Instructor in Microbiology and Pathology, Army School of Nursing, Washington, D. C. With 102 illustrations, some in colors. Philadelphia: F. A. Davis Company.* 1931. *Price,* $2.50.

This elementary work is designed to satisfy the classroom and laboratory requirements of the courses in microbiology and pathology prescribed in the standard "Curriculum for Schools of Nursing of the League of Nursing Education." It is also intended as an aid and guide to the instructor.

The arrangement and form of presentation is the result of five years' experience in instructing student nurses, in the Army School of Nursing, evolved from the author's lecture notes.

The descriptions are simple and give a suitable perspective of the subjects dealt with, and the language avoids to a great extent the technicalities of the usual textbooks designed for the use of medical students.

The book should amply fill the place it was intended to occupy as a nurses' manual.

Bettman: Truths for Laymen

HOW IT HAPPENED. By *Adalbert G. Bettman, M.D., F.A.C.S. Philadelphia: F. A. Davis Company.* 1931. *Price,* $1.00.

One of the most important and pressing duties of medical men at this time is to educate the public regarding the vital truths of preventive medicine. This is not always easy to do, but in this small and attractive volume, Dr. Bettman has placed in our hands an invaluable assistant.

On each of the 110 pages appears a little story, told with the force and pungency of an epigram and printed in the form of free verse, explaining why some individual died or became an invalid, by reason of venereal disease, abortions, delay in securing medical attention, etc., as if in the words of the person himself. Each of these tiny sermons is like a sharp, slender, polished nail of thought, driven into the consciousness of the reader by a few strong, blunt words. The things which are not said frequently make an even more powerful impression than those that are clothed in words:

Here is a sample:

INEZ ADAMSON

I wanted to get well
at once
Or, I would not
Take treatment at all.
The progress
Which I was making
Was too slow
To satisfy me.
And then
The doctor said
He could not promise
A cure,
Although he would do
The best he could.
Faith cure promised
A sure and speedy
Return to health.
I chose the shorter road;
It looked the better.
And I arrived here
Sooner
Than I expected.

If every physician would place one of these little books on the table in his waiting room he would do much for the education of the public, for any one who starts to read these pithy and human statements of vital truths will read on—and will remember.

Surgical Clinics of North America

THE SURGICAL CLINICS OF NORTH AMERICA. *Philadelphia Number. Volume 10, Number 6, December,* 1930. *Philadelphia and London: W. B. Saunders Company. Issued serially, one number every other month. Per Clinic year, February,* 1930, *to December,* 1930: *Paper,* $12.00; *Cloth,* $16.00.

The December number of *Surgical Clinics of North America* is devoted to contributions from Philadelphia surgeons. Dr. J. B. Deaver opens with a clinical lecture on cancer of the rectum. This is followed by a number of papers from the clinic of Drs. Chevalier Jackson and W. Wayne Babcock, including operations for diverticulosis of the esophagus and for femoral arteriovenous aneurism.

Papers of particular clinical interest are "Chronic Empyema Treated by the Multiple Stage (Keller) Method," by Drs. J. H. Jopson and N. S. Rothschild; "Pathologic Fractures," from the clinic of Dr. E. L. Eliason and associates; "Intestinal Tumors," by Dr. E. J. Klopp; an excellently detailed case report paper on "The Management of Tumors of the Posterior Fossa by the Transtentorial Approach," by Dr. Temple Fay; and one on "Acute Suppurative Osteomyelitis," by Dr. T. J. Ryan.

We consider this an unusually good practical number of the Clinics and surgeons should find in it many matters which will be great value to them in their everyday work.

MEDICAL NEWS

Sex Researcher Visits America

During the month of January, 1931, this country was visited by the well known sex researcher, **Dr. Magnus Hirschfeld,** of Berlin, who is sometimes referred to as "The Einstein of Sex" or "The Havelock Ellis of Germany." He was cordially received in New York, Chicago (where a dinner in his honor was given by Dr. Max Thorek) and other cities, where he spoke, in German and in English, which he handles very well, before a number of groups of physicians. He will proceed to Hawaii and Japan and visit other Oriental countries before returning home.

It is a matter of regret that so few of Dr. Hirschfeld's important works have been translated into English.

Vitamins

Within a few months, a *Journal of Vitamins and Accessory Foods* will appear.

If those of our readers who are interested in vitamins and all of the enormously important problems in nutrition which are claiming increasing interest among the members of the medical profession, will send us their names and addresses, we shall be happy to arrange that they receive the first issue of this important publication.

United States Civil Service Examinations

The United States Civil Service Commission announces the following-named open competitive examinations:

Physiotherapy Aide

Applications must be on file with the U. S. Civil Service Commission, Washington, D. C., not later than March 10, 1931.

Occupational Therapy Aide
(Arts and Crafts)

Applications must be on file with the United States Civil Service Commission, Washington, D. C., not later than March 25, 1931.

Chief Nurse (Indian Service)
Head Nurse (Indian Service)
Graduate Nurse (Various Services)
Graduate Nurse, Visiting Duty
(Various Services)

Applications will be rated as received by the U. S. Civil Service Commission at Washington, D. C., until June 30, 1931.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

Send For This Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physician's supplies, foods, etc., CLINICAL MEDICINE and SURGERY, North Chicago, Ill, will gladly forward request for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

When requesting literature, please specify whether you are a doctor of medicine, dentistry, medical student, a registered pharmacist, or a nurse.

L- 3 Storm Binder and Abdominal Supporter. 4-page folder by Dr. Katherine L. Storm.

L- 45 Vera-Perles of Sandelwood Comp. Paul Plessner Co.

L- 47 Campho-Phenique in Major and Minor Surgery. Campho-Phenique Company.

L- 95 Everything for the Sick. Lindsay Laboratories.

L-116 Hemo-Glycogen, The New Product Hemoglobin Compound and Liver Extract. Chappel Bros., Inc.

L-120 Building Resistance — Guiatonic. William R. Warner & Co., Ltd.

L-196 "Facts Worth Knowing." Intravenous Products Co. of America, Inc.

L-258 Prophylaxis. August E. Drucker Co.

L-269 Special Course No. VI Traumatic Surgery. Illinois Post Graduate Medical School, Inc.

L-271 The Intestinal Flora. The Battle Creek Food Company.

L-292 Acidosis and Infection—Alka Zane, William R. Warner & Co., Inc.

L310 Conclusions from published research of the value of Ceanothyn as a hemostatic. Flint, Eaton & Co.

L-318 Blood Clinical and Laboratory Diagnosis. A book of 160 pages by Henry Irving Berger, M.D. Battle & Company.

L-347 Graphic Chart of the Treatment of Circulatory Disturbances. Merck & Company.

L-354 Getting the Most Out of Life. Stanco, Inc.

L-374 Table for Determining Date of Delivery. The Viburno Company, Inc.

L-383 Syrup Histosan Controls the Cough In Acute and Chronic Bronchitis, Pneumonia and other Pulmonary Diseases. Ernst Bischoff Co., Inc.

L-391 Imhotep. Egyptian Medicine Was a Quaint Mixture of Rationalism and Magic — Agarol. William R. Warner & Co., Inc.

L-392 Arthritis. Its Classification and Treatment. Battle & Co.

L-401 When the Cross Roads are Reached in Hemorrhoids (Piles). Schering & Glatz, Inc.

L-402 The First Question—Agarol. Wm. R. Warner & Co., Inc.

L-404 Urotropin, the Intravenous Administration of the Original Farmaldehyde-Liberating Urinary and Systemic Antiseptic. Schering & Glatz.

L-410 Acidosis. A Warning Sign in Pregnancy—Alka-Zane. Wm. R. Warner & Co., Inc.

L-414 Laboratory Test in Pictures—Silvogon. Ernst Bischoff Company, Inc.

L-425 Cerebrospinal Fever (Epidemic, Cerebrospinal Meningitis, Meningococcic Meningitis, Spotted Fever), Symptoms and Specific Treatment with Anti-Meningococcic Serum. The National Drug Co.

L-443 AbilenA. Its Location, Discovery. Origin, Chemistry, Medicinal or Clinical Value and Uses. The AbilenA Co.

L-446 Dependable Products, Pan-Secretin Co. Adreno-Spermin Co., Lydin and Pancreas Co. The Harrower Laboratory, Inc.

L-449 General Catalog of Medicinal Chemicals. Bilhuber-Knoll Corp.

L-455 AbilenA, The Ideal Cathartic Water. The AbilenA Co.

L-456 Science Applied to Tobacco. Health Cigar Company, Inc.

L-465 Diagnosis of Cardio-Vascular Diseases, by Henry Irving Berger, M.D. Sultan Drug Company.

L-468 Maltbie Calcreose — A Problem Solved. Maltbie Chemical Co.

L-471 Potassium Thiocyanate in the Treatment of Arterial Hypertension (Primary). Sutliff & Case Co.

L-473 The New "Universal" Post Cautery. Post Electric Company, Inc.

L-478 Diatussin in the Treatment of Whooping Cough and Other Spasmodic Coughs. Ernst Bischoff Co., Inc.

L-480 The Incidence of Eczema in Skin Diseases in about 20 percent. Bilhuber-Knoll Corp.

L-481 The Breath of Life—Alpha-Lobelin. Ernst Bischoff Company, Inc.

L-482 Why More and More Dentists Use Phennol! Phennol Laboratories.

L-490 Are Your Patients All At Sea? Detoxol Paste. The Wm. S. Merrell Company.

L-491 Announcing a New and Better Sedative—Sedormid. Hoffmann-La-Roche, Inc.

L-492 Quartz Burdick Prescription Lamps. The Burdick Corporation.

L-494 The Hormone. The Harrower Laboratory, Inc.

L-495 Iodine Prescription Specialties (Burnham's). Burnham Soluble Iodine Co.

L-496 Natural Salicylates. The Wm. S. Merrell Company.

L-502 Fifty Years of Success. The Keeley Institute.

L-503 Endocrine Essentials — Ovarian Organotherapy. The Harrower Laboratory.

L-504 Bedtime Nourishment. Mellin's Food Co.

L-505 Mellin's Food—A Milk Modifier. Mellin's Food Co.

L-507 The Secret of Our Digestive Glands. J. W. Wuppermann Angostura Bitters Agency, Inc.

L-514 Definite Aids in Reducing Infant and Maternal Mortality. "Nss" Sales Company, Mfrs.

L-519 Clinical Results from Stimulated Leukocytosis by Burr Ferguson, M.D. Hille Laboratories, Inc.

L-520 Treatment of Wassermann-Fastness with Colloidal Mercury Sulphide-Hille. Hille Laboratories, Inc.

L-521 "The Doctor Prescribed Heat!" The Burdick Corporation.

L-522 Burdick Quartz Mercury Arc Lamps for Prescision in Ultra-Violet Therapy. The Burdick Corporation.

L-523 Urinary Tests and Color Charts for Practical Use in Office Diagnosis. Od Chemical Co.

L-524 Balance, the Importance of the Acid-Base Equilibrium of the Body. The BiSoDol Company.

L525 The Treatment of Hemorrhage with Therapeutic Notes on the Use of Ceanothyn. Flint, Eaton & Company.

L-526 The Keeley Home Treatment for Tobacco. The Keeley Institute.

L-527 Elixir Angostura Amarum, Siegert. Angostura Bitters in the Daily Practice. J. W. Wuppermann Angostura Bitters Agency, Inc.

L-528 Iodine Prescription Specialties (Physiologically Available FREE Iodine), Oral, Intravenous, Intramuscular Alveolar Inhalation and Local. Burnham Soluble Iodine Co.